

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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CONTENTS.

	PAGE
Editorial Comment:	
Our Phantom Air Fleet ...	863
The Naval Air Service ...	864
Men of Moment in the World of Flight: Lewis W. F. Turner ...	864
Armchair Reflections. By The Dreamer ...	866
Sand-Yacht—the New Sport ...	868
Royal Aero Club. Official Notices ...	870
From the British Flying Grounds ...	870
Flying at Hendon ...	873
Our Service Aircraft and the Government ...	876
British Notes of the Week ...	880
Foreign Aviation News ...	881
Models. Edited by V. E. Johnson, M.A. ...	884
Correspondence ...	886

EDITORIAL COMMENT.

Our Phantom Air Fleet.

It is with more of the sense of shame than with any other feeling that we approach the subject of the recent disclosures made by Mr. Joynson-Hicks and Mr. Sandys with regard to the hopeless state of the Military Wing of the Royal Flying Corps. What must be thought abroad of the cynical effrontery of a Minister of the Crown who so lightly regards the truth as to allow himself to be convicted in the face of Parliament and the country of what can only be construed into a deliberate attempt to cloak neglect and to mislead the country into believing that things are otherwise than as they are? At one time it was the proud boast of this country that its Ministers were above the petty attempt to deceive—that whatever sins might be laid at the door of a Government of the time, at least it told the truth to the country. After the shameful disclosures which are contained in the report made by Messrs. Joynson-Hicks and Sandys, it is quite impossible that we can look the world in the face and say with the Pharisee that at least we are better than others. To our way of thinking, anything more shameful, more deplorable than the cynically light-hearted manner in which Col. Seely has dealt with the whole question of the Military Wing would

be hard to find in the records of British public life. Not only has he neglected, in his capacity of Secretary of State for War, to keep the Royal Flying Corps up to the standard which he himself has admitted to be necessary, but when questioned upon the subject he has not scrupled to meet his questioners with answers which, to apply to them the mildest possible term, he must have known were not accurate—which, in fact, were very wide indeed of the truth.

In another part of this issue of FLIGHT we publish a letter from Mr. Joynson-Hicks which has been sent round to the Press generally, and which deals in the most exhaustive, and, we are bound to add, in the most impartial manner, with the position of the Military Wing of the Royal Flying Corps as disclosed by the inspection made by himself and Mr. Sandys at the express invitation of Col. Seely. In addition, we also reproduce *in extenso* the report of the debate on the section of the Army Estimates dealing with the appropriation for aviation. These are necessarily set forth in considerable detail, and, for the sake of clarity as to the issues, it may be well if we touch upon the most important points of Mr. Joynson-Hicks' letter, in which it is shown beyond all possibility of dispute that Col. Seely did in fact mislead the House and the country on some of the gravest essentials of the position.

First, as to the number of effective machines in the possession of the Military Wing. We need not go back to the early part of the year, when, on the introduction of the Army Estimates, the War Minister was questioned as to the effectiveness of the Royal Flying Corps. It will be quite sufficient if we take so recent a date as July 12th. On that day Mr. Joynson-Hicks challenged Col. Seely to produce 120 machines—failing that, 90, or even 80 machines—which could efficiently fly. Col. Seely's reply—we quote from "Hansard"—was:—"We have now got 120 machines—I take only those in first class order." Now, what was really the position? Only a week after this most definite and categorical statement, we find that, according to the War Office itself, there were but 53 machines which could be said to be ready to fly, apart from monoplanes which are not allowed to be flown, while of these 10 were experimental machines which had not even been handed over to the Royal Flying Corps. Analysing the figures given by the War Office still further, we find that the number of machines "ready to start for war to-morrow morning" was 43, and of these 20 were

school machines being used daily for instructional purposes at the Central Flying School, and being subjected to almost daily damage. Thus we find that the War Minister's claim that he had 120 effective machines filters down to a paltry three-and-twenty! Was ever a more pitiful state of things disclosed or a more painful commentary upon the low state to which our public life has descended? We think not.

The plain question seems to us to arise: Did the War Minister place before the House of Commons the real position as it was on the 12th of July, or did he lay before the House a statement of alleged facts which were not facts? What he said was, that we had 120 machines ready to fly—"in first class order." There can be no boggling over this. The statement was made as one of fact, while the plain truth is that we had not half that number ready for war. To us it seems at the moment that the issue is not so much whether the Royal Flying Corps was in a state of efficiency at the time the War Minister made his statement—though in all conscience that is important enough—but whether we have not come to that deplorable pass when it is impossible to accept the *ipse dixit* of one of His Majesty's Ministers on a plain issue of fact. Let us put the matter as baldly and plainly as possible. When Col. Seely said in the House that we had 120 aeroplanes in first class order, he either knew or he did not know that so far from this being the case the position was as disclosed in the list of machines supplied by the War Office to Mr. Joynson-Hicks a week later. That is a plain proposition, and one from which it is impossible to get away. If he did not know, then he is responsible to the country, as the titular head of the War Office, for the ignorance of himself and his department—in other words, he is incompetent as a War Minister. If he did know, then the plain English of it is that he deliberately told the House of Commons what he knew to be untrue. We can see nothing in between the two. No amount of juggling with figures will explain away a position of the kind that has been disclosed through the controversy between the Secretary for War and Mr. Joynson-Hicks.

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LEWIS W. F. TURNER.

PILOT-INSTRUCTOR.

It is very interesting at this time, when the Fédération Aéronautique Internationale has just decided to make the qualifying tests more difficult, to recall that it was Lewis W. F. Turner who practically inaugurated the new era in England in 1911 as he was the first pilot to get his "ticket" under the revised regulations which came into force in April, 1911. Under these regulations it became necessary to make the right-hand turn, which had up to then been considered a somewhat hazardous undertaking, but Turner showed that there was really nothing to be feared in this direction. Turner qualified at the Grahame-White school at Hendon on the Farman biplane on April 4, his certificate being numbered 66. Soon after securing his *brevet*, Lewis Turner joined the Valkyrie school at Hendon, as pilot-instructor, and then later in the year he was engaged by Mr. Mackenzie Kennedy, as chief pilot and engineer, to go to Russia and test a new machine which was being built near St. Petersburg. Although, as a matter of fact, this experimental machine had not been finished by the time Turner returned to London in the following year, he had plenty of opportunity of keeping his hand in, as he was given the run of the Farman machines at the club school, and

The Naval Air Service.

At last, according to the *Daily Mail*, which claims to be authoritatively informed on the subject, the Naval Air Service is about to be expanded on a scale more appropriate to its importance to this country. Incidentally, it is to be a separate department instead of merely the Naval Wing of the Royal Flying Corps. The importance of this change in titular dignity interests us less than the far more important issue as to whether the service in question is to be adequately financed.

We should be very well pleased to know for certain that the programme of ten additional airships and 200 waterplanes was to be carried out with the utmost liberality and dispatch. We say liberality because the present is not an occasion for the exercise of methods corresponding to those of the Contracts Branch of the War Office, which unquestionably serves a useful purpose to the nation in most of its business, but has been a singularly fussy interrupter in the matter of aeroplanes.

The thing that we must most avoid in England, in our opinion, is a one-sided programme. We need dirigibles as well as waterplanes. Indeed we need to know everything that there is to know about any sort of aircraft that shows itself capable of being navigated under the sky. The opportunities for dealing with the question of dirigibles are few and far between, but we trust no one has any doubt about our favourable attitude towards them.

To-day it is of first-class importance that we should possess British-built airships, but these we cannot have unless the Naval Air Service is provided with enough money to develop them properly. It cannot afford to stint the expenditure on seaplanes for the purchase of airships. We have very little hesitation in saying that three seaplanes need to be constructed for every one that can be regarded as fit for service at a moment's notice under present conditions, although, of course, in time, this proportion will alter vastly. If the idea is to have 100 aeroplanes in active commission, without doubt the Navy must possess 300 machines in order to allow for those placed *hors de combat* by temporary damage and complete wreckage.

on one occasion he was flying over the suburbs of the Russian capital with the temperature 12 degs. below Zero. Returning to England in January, 1913, Turner was engaged as a chief pilot at his old school, the Grahame-White, and during the succeeding months he steadily built up a splendid reputation as an instructor and as a passenger carrying pilot. Incidentally, too, he was the most successful of the Hendon pilots in the competitions, and his bag for the season included eleven firsts, nine seconds, and a dozen thirds, this record including the winning of every bombing contest held at Hendon. On the 50 h.p. Grahame-White biplane, the Howard Wright and the Henry Farman machines he used to fly in any sort of weather, so that a wag once suggested that his initials really stood for Lewis Will Fly To-day. Towards the end of last year Turner was engaged by the W. H. Ewen Aviation Co., Ltd., as a pilot and instructor at the Caudron school, and there he is to-day continuing his tale of success. His activities lately have not been altogether confined to Hendon, as a little time back he was flying a Caudron biplane up in Scotland for the Ewen Co.

"THE HAWK."

AUGUST 9, 1913.

FLIGHT

MEN OF MOMENT IN THE WORLD OF FLIGHT. Pilot-Instructors.



MR. LEWIS W. F. TURNER.

ARMCHAIR REFLECTIONS.

By THE DREAMER.

"They Wept like anything to see such quantities of Sand."

I KNOW I am by way of being kind-hearted; whether I also look benevolent I cannot say, but there must be something in the composition of my physiognomy which points me out to the unscrupulous as fair prey, and I doubt not that I am frequently had. Tears copiously shed by either sex, especially if the shedder be very young or very old, is sufficient to touch me down for the price of the requisite by the instantaneous drop-shutter process.

By way of illustration, on Sunday night last I was at Liverpool Street Station, when I saw four poor little boys, dirty little boys they were too, all crying in silent chorus. On enquiry I found that one of them had lost his return ticket to Edmonton, and the other three, although they had their tickets all right were standing by their pal like little men, and helping with their share of briny tears, to call attention to the downfall of their comrade. My commercial mind quickly worked out the fact that the single fare to Edmonton could not be more than about sixpence, and that this poor dirty little boy being under twelve years of age, could be restored to his no doubt anxious parents, four poor little weeping hearts made happy, and one more good act placed to my credit, all for the small sum of three pence, and I was moving off, followed by the quartette of dirt and misery, when a porter touched me on the shoulder. "Excuse me, are you going to buy that boy a ticket? 'cause if so, don't. They play this game every Sunday; he's got his ticket all right, he wants the money."

I have told you all this, not to show what a nice man I am, but because before I write any more I want to impress it upon your mind that a fellow feeling makes us wondrous kind, and I have a feeling—a very fellow feeling for poor Col. Seely and his colleagues at the War Office: it seems to me that they have been imposed upon; they ought really to engage my porter to look after them. I have been looking over some back numbers (none but a "fool" writer would do that), and I find that I have sometimes said things not altogether complimentary about them (the colleagues I mean, not the back numbers), and I am sorry, and hold out the glad hand; we are brothers under the same banner, and the pass-word is—touch wood and whistle: and as a brother it is my duty to defend another brother, or brothers in adversity. It is all very well for you to laugh at the downfall of others, but place yourself in their position.

Suppose you had sat there as they may have done (when I say they, I mean the department as a department, and for years past) and had all sorts of "fool" inventions brought up before you; from a pneumatic shrapnel pumped up during low tide at Barking Creek, and warranted on bursting to kill every living thing within miles; to a patent collapsible Field Marshal's baton, to be carried in the knapsack of every private; which on being opened out is found to be a complete set for that old English game known as "Codem"; and all these fine things got sold to other countries, and all the people kept grumbling—well, there you are, one must buy something sometime, even as the little joke of the man in the street is sometimes "bought" by his trusting friend.

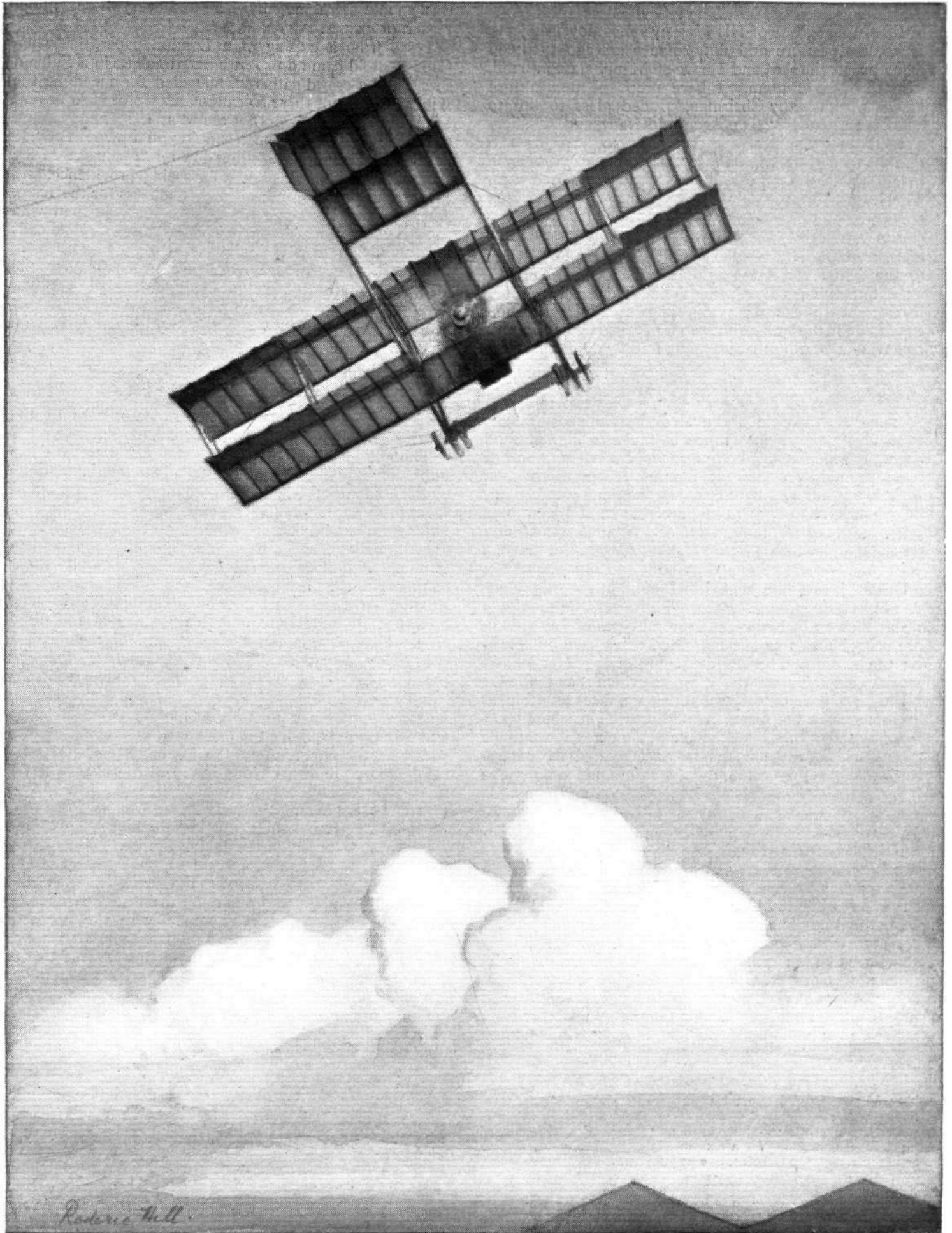
Mr. James Douglas Gray is a great inventor; everybody who knew him as Mr. McCallum Mhor would be

ready to testify to that. What Mr. Mhor can't invent isn't worth troubling about. He it was who first brought "motoring for the million" within reasonable distance of being an accomplished fact. In spite of the price of cars; in spite of the price of petrol; Mr. Mhor, working on his own system, could run a slap-up-to-date car at a monetary cost well within the reach of the thirty-shilling clerk; nothing but police traps worried him. To cut off the ignition of an aerial engine on the ground is easy enough—then why not in the air? True, Mr. Gray intended to work from the earth, but wireless has created many sensations in unexpected quarters; why not in this? Isn't it well known that a choking-coil placed even within feet of an arc light, will deflect the arc? Whether he intended to send up a choking coil by wireless, or how he intended to proceed is, of course, not known—they did not give the poor man time, and time is what he really wants, and plenty of it. Give him time, and I am sure he will come out all right at the end of it. At the present moment, if any of you happen to know of a deserving golf course in the neighbourhood of Salisbury whose bunkers need refilling I believe there is a nice box of sand to be had for the carting.

The Aerial Derby.

So the Aerial Derby is to take place after all: this is indeed good news. When I remember the tremendous amount of interest this event created last year amongst the people of Greater London, who by reason of the distance they live from an established aerodrome do not often get the chance of the sight of an aeroplane, I am assured that many thousands will be as pleased as I am at the news that the ban has been removed, or so modified as to permit of the event taking place. Last year, the country roads round about the whole course were simply packed with people, who had, in many instances travelled long distances to view the sight, and there is not much doubt that many then had their first sight of a machine actually in flight. I have never yet been able to see sufficient reason for the authorities prohibiting the race taking place at the time when it was intended that it should have been flown, but I don't profess to understand everything they do.

The idea of prohibited areas is all right in its way, if there were but a little reason with it in the matter of administration, and an exception on occasions such as these would but go to prove the rule. Well anyway, the race is going to take place after all, that is the main thing; and I must congratulate those who have stuck to it and fought and argued till they have been successful. The start and finish is again to be at Hendon, and I am pleased that the regulations have been so modified as to allow this to be. A race of this description is not organized without a deal of trouble and expense, and I hope that Hendon will have a good "gate" in return for their trouble, and for the fact that unless it could be flown from there it probably would not be flown at all. Luckily the postponement to September is not likely to make much difference to the entries, as it is not necessary to build special machines for this, as it is for the Circuit of Britain, which, owing to the delay and uncertainty as to whether it would really ever take place at all, has no doubt restricted the entries to four. I should like to see a fine day, plenty of machines and a tight finish; not forgetting tens of thousands of visitors.



MR. PASHLEY FLYING THE FARMAN MACHINE AT SHOREHAM AERODROME.—From an original drawing by Roderic Hill.

Gentlemen—The King: God Bless Him.

I am, I hope, one of His Majesty's most loyal subjects. It was my pleasure and duty some years ago to attend many public dinners, and I have stood up, glass in hand, with the best of them. I have proposed the health of "Our Most Worthy Chairman," placed glass to lips to "Absent Friends," "The Army and Navy, and Auxiliary Forces," to "Our Noble Selves," and to anything else that happened to crop up as an excuse for toasting, and in addition, have on very many occasions responded for The Ladies; always a great pleasure to me. I have seen the whole show through from *hors d'œuvre* to "Porder—caw me a four (hic) wheeler," and I have long since written it all down as silliness—all but the part wishing good health to the King. It is the custom in this country to finish all entertainments by playing the National Anthem, and it is right to call for three times three for the first gentleman in the land on occasions of national importance or having a bearing that way, but I really do not see why



SAND-YACHTS—THE NEW SPORT.

A PLEASURE vehicle of novel design which is rapidly becoming popular in France is the *aéroplage* or sand yacht, of which it will be remembered there were one or two examples on view at the last Paris Salon. An *aéroplage* is simply a light chassis somewhat on motor car, or, perhaps, one ought to say, cyclecar lines driven by a sail instead of a motor. Of course, it is not strictly speaking a new idea for it is really a adaption of the ice yacht, and several years ago we built one and carried out a lot of "sailing" on the South Downs, in the neighbourhood of Eastbourne. Just lately, however, the sport has been taken up in France, and several types of this vehicle are being built by various firms, and races have been held on the sands and others are being arranged at various seaside summer resorts. Those which have already taken place have demonstrated that the races afford great amusement for the spectators and provide excellent sport for the competitors. We have already given illustrations of examples of these machines and suggested their introduction into this country. Most notable among the *aéroplage* constructors is M. Louis Blériot, and our scale drawings this week represent one of his machines, several of which have been bought by the *Daily Mail* in order to introduce these vehicles or craft—one is not quite sure which term to use—into this country, where they should very quickly become as popular as they already are on the other side of "la Manche."

As the sand yacht is so simple in its construction that the scale drawings are almost self-explanatory, a very short description will suffice. Two planks of wood running fore and aft and placed very close together, form the "body" of the yacht. Running transversely and bolted to the underside of this frame is the tubular front axle which is made unusually long in order to provide a

this should be done anywhere and everywhere without reason or excuse.

I see from a cutting of a London paper, that when Capt. Penfold came down with his parachute in a Fulham street, and a crowd gathered, he called for cheers for the King. I was not there so cannot say if this is so or not, but if he did, I really do not see what the King had got to do with it. Fancy a man slipping on a piece of orange peel in the Strand, and settling down *à la* pancake on the shock absorber provided by a far seeing providence, and then calling on the crowd for three cheers for the King. There is perhaps some little excuse for the man who unexpectedly runs up against another man's fist, and calls for the saving of His Majesty, because he most likely thought he saw quite a number of stars all over the man, which are difficult to distinguish with but one eye. Let's keep the name of the King for occasions where it is respectful to use it, otherwise it will lose its reverence.



wide track—this, of course, being necessitated by the employment of a sail for the propulsive power.

The rear axle, which is considerably shorter than the front axle, is pivoted in the centre, as the steering is done by the rear wheels, a feature which enables the sand yacht to be turned in a very small circle.

Between the two planks, which form the chassis frame, are the driver's and passenger's seats arranged tandem fashion. A tubular steering column secured at its lower extremity to the mast socket and supported on a bearing situated on an arch formed by a piece of strip steel carries at its upper end a steering wheel of the usual type. From a drum on the lower end of the steering column cables pass round pulleys on the chassis frame to the back axle, which is, as previously said, centrally pivoted.

Midway between the members of the chassis frame and immediately above the front axle, is the socket into which fits the lower end of the mast. Four short steel tubes bolted to the chassis frame and terminating at their upper ends in a ring in which the mast is a sliding fit, serve as stays for this member, further staying being provided by three cables running from the top of the mast to the members of the chassis frames.

The sail is controlled by means of a cable running from a tubular extension of the back rest of the passenger's seat round a pulley on the outer end of the sail boom from where it runs parallel with the boom to another pulley in the inner end of that member whence it is taken to a cleat on the chassis frame, close to the pilot's seat. Owing to the wide wheel track and the absence of any springing, the axles have been strengthened by means of trussing in the manner shown in the front elevation.



THE ROYAL FLYING CORPS.

The following appointment was announced by the Admiralty on the 29th ult. :—

Lieut. R. H. Clark-Hall, to the "Hermes," additional, as Squadron Commander for armament duties with aircraft, and as acting interpreter in German, to date July 29th.

ROYAL FLYING CORPS (MILITARY WING).

WAR OFFICE summary of work for week ending August 1st :—

No. 1 (Airship) Squadron, Farnborough.—On July 26th, 28th, 29th and 31st, the "Beta" (I) made a number of training flights. Kiting was carried out on the 30th.

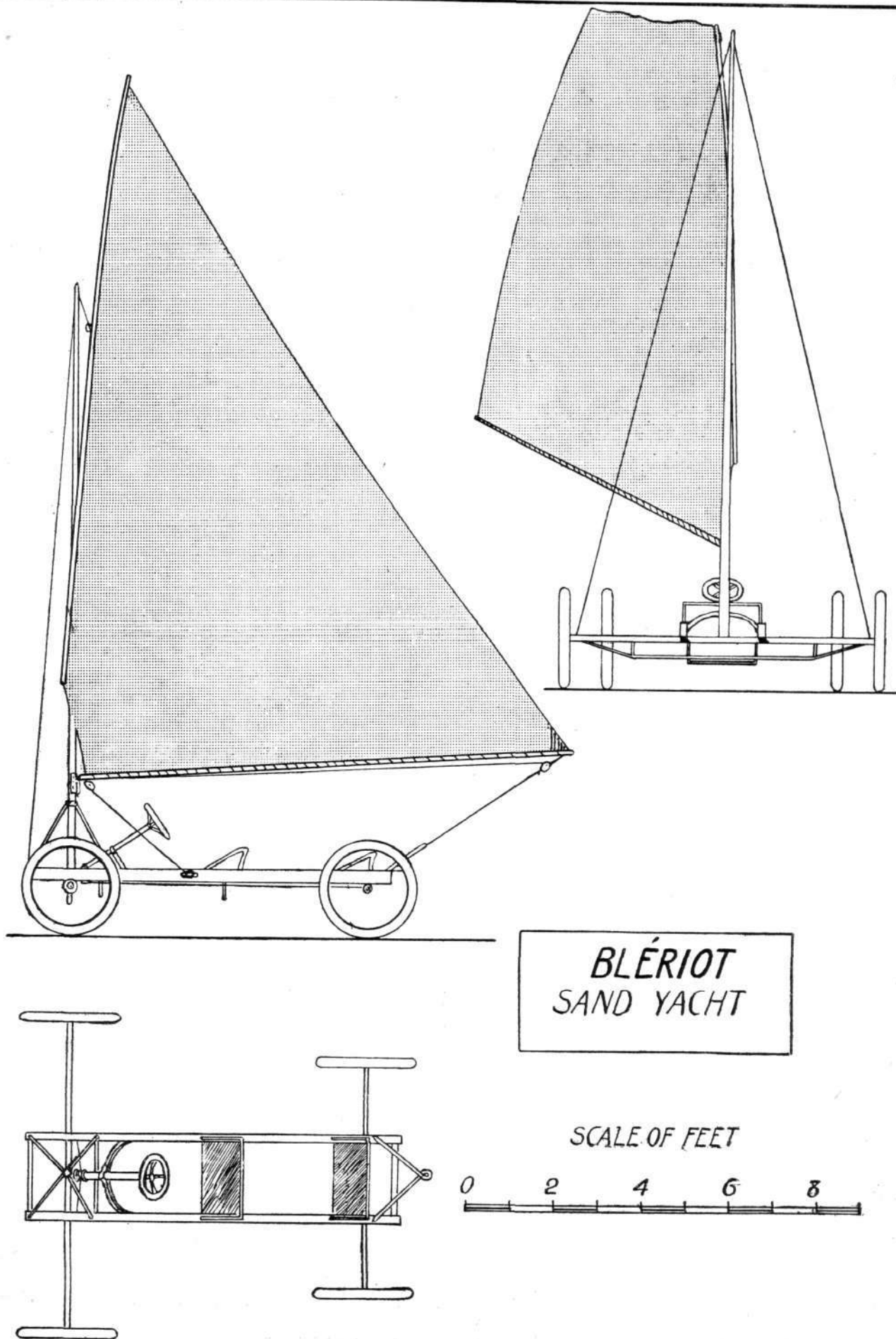
No. 2 Squadron, Montrose.—Work with the manoeuvres at

Ayr was continued during the week. The flight returned to Montrose. The results of the reconnaissances on the manoeuvres were very satisfactory.

No. 3 Squadron, Netheravon.—A large number of flights took place daily on BEs, Avros, and Henry Farmans. The detachment at Lydd completed their period of co-operation and training with the Artillery at that place, and proceeded to Headquarters. Total mileage for the week, 2,234 miles.

No. 4 Squadron, Netheravon.—The Officer and N.C.O. pilots of this squadron were out throughout the week, training and carrying out reconnaissance flights on BEs and Maurice Farmans.

Flying Depot, Farnborough.—A considerable amount of experimental work was effected during the week.



BLÉRIOT
SAND YACHT

AEROPLAGING FOR SANDS OR AERODROME.—Scale drawings of the Blériot sand yacht,

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

DAILY MAIL £5,000 PRIZE: CIRCUIT OF GREAT BRITAIN.

THE Contest for the *Daily Mail* £5,000 Prize will start from Southampton, on Saturday, August 16th, 1913, at 6 a.m.

The Royal Motor Yacht Club has kindly extended Honorary Membership of its Club to all Members of the Royal Aero Club during the period covered by the Race. The Headquarters of the Royal Motor Yacht Club is the "Enchantress," which is moored in Southampton Water off Netley Hospital.

The following competitors will take part:—

- No. 1. MR. T. O. M. SOPWITH (Pilot, H. G. Hawker).
- No. 2. MR. S. F. CODY.
- No. 3. MR. JAMES RADLEY.
- No. 4. MR. F. K. MCCLEAN.

Headquarters at Southampton.

"Enchantress," at Netley Abbey, Hants.

Telegrams:—Perrin, "Enchantress," Netley Abbey.

Telephone:—Netley 2.

Officials at Southampton.

Mr. F. P. Armstrong, Mr. G. B. Cockburn, Lieut. Spencer D. A. Grey, R.N., Col. H. C. L. Holden, Mr. N. C. Neill, Mr. Alec Ogilvie, and Mr. Harold E. Perrin, Secretary. *Marking Committee*—The following officials have been appointed to carry out the marking of the competing aircraft at Southampton: Mr. G. B. Cockburn, Mr. N. C. Neill, and Mr. Alec Ogilvie.

Ramsgate.

Officials—Mr. Alec Ogilvie, Mr. A. H. Ramsden-Tagore, Mr. L. W. Thomas and Mr. C. G. Grunhold.

Yarmouth.

Officials—Lieut. C. L. Courtney, R.N., Lieut. T. S.

Cresswell, R.M.L.I., Mr. H. H. Harford, and Lieut. R. Gregory, R.N. *Headquarters*—Naval Air Station, Yarmouth.

Scarborough.

Officials—Mr. A. J. A. W. Barr, Mr. B. M. Dodds, Mr. Walter E. Nicoll, and Mr. J. W. F. Tranmer. *Headquarters*—Grand Hotel, Scarborough.

Aberdeen.

Official—Capt. G. W. Dawes, R.F.C.

Cromarty.

Official—Lieut. A. M. Longmore, R.N. *Headquarters*—Naval Air Station, Cromarty.

Oban.

Officials—Mr. J. Allison, Jr., and Capt. W. A. de C. King, R.E. *Headquarters*—Great Western Hotel, Oban.

Kingstown, Dublin.

Officials—Mr. Oliver Fry, Mr. D. G. Gillman, Mr. J. C. Percy, Mr. F. Trench, Major Wellesley, and Mr. E. White. *Headquarters*—Royal St. George Yacht Club, Kingstown.

Falmouth.

Officials—Mr. Robert G. Borne, Mr. Claude Foster, Major J. D. B. Fulton, R.F.C., Capt. E. J. K. Nicholls, and Mr. A. Ireland Wright. *Headquarters*—Royal Cornwall Yacht Club, Falmouth.

Warning to Aviators.

The White Hawk Kite Station, which is situated close to the Brighton Race Course, has written to the Royal Aero Club drawing attention to the danger to aviators flying in the vicinity of Kite Station, as kites are flown regularly for observation purposes.

166, Piccadilly, W.

HAROLD E. PERRIN, Secretary.

FROM THE BRITISH FLYING GROUNDS.

Brighton-Shoreham Aerodrome.

Last week the weather here was none too pleasant, high winds prevailing most of the time. The pupils of the Avro school, under instruction of Mr. A. Geere, put in as much work as possible, and Mr. Eric Pashley did a deal of flying on the H. Farman.

A meeting, as usual, was held on Sunday afternoon, when Mr. A. E. Geere, on an Avro 'bus, put in some very nice circuits, and Mr. Eric Pashley took up several passengers on his machine. The success of the afternoon was marred by an accident to Mr. Pashley, a motor cycle running into him, unfortunately breaking his leg. Dr. Wood was at once called in, and the injured man was conveyed to his house on a car, kindly lent by Mr. George Hill.

Shaw then went out for circuits, but was flying particularly low.

Monday saw the Avro school out again, and Tuesday evening a good deal of work was done.

Brooklands Aerodrome.

Bristol School.—Sunday evening, last week, Merriam trying conditions taking Lieut. Roche as passenger. Bendall made test and Merriam gave exhibition flight. He afterwards up with Lieuts. Roche and Lewis. Bendall with Lieuts. Roche and Lewis. Merriam with Lieut. Roche to Chertsey and back.

Next day at 5.15 a.m. Merriam test, then up with Lieuts. Roche, Lewis, Mead and Darley on straights and circuits. Again giving some pupils another turn each. Lieut. Darley alone on straights doing extremely well for first time. Merriam test and found too bad for further school work. 6 p.m. Bendall test, then up behind Lieuts. Lewis, Roche and Mead. Bendall up with Mr. Willey Voight (prospective pupil). Lieut. Darley good straights and circuits.

Bendall on Tuesday at 10 a.m. for test, then up behind Lieut. Roche. Lieut. Darley straight flights. In evening wind ceased a little. Merriam then for test and found it rather bumpy. Later with Lieuts. Mead and Lewis. Bendall up with Lieut. Roche and found it too bad to continue school work.

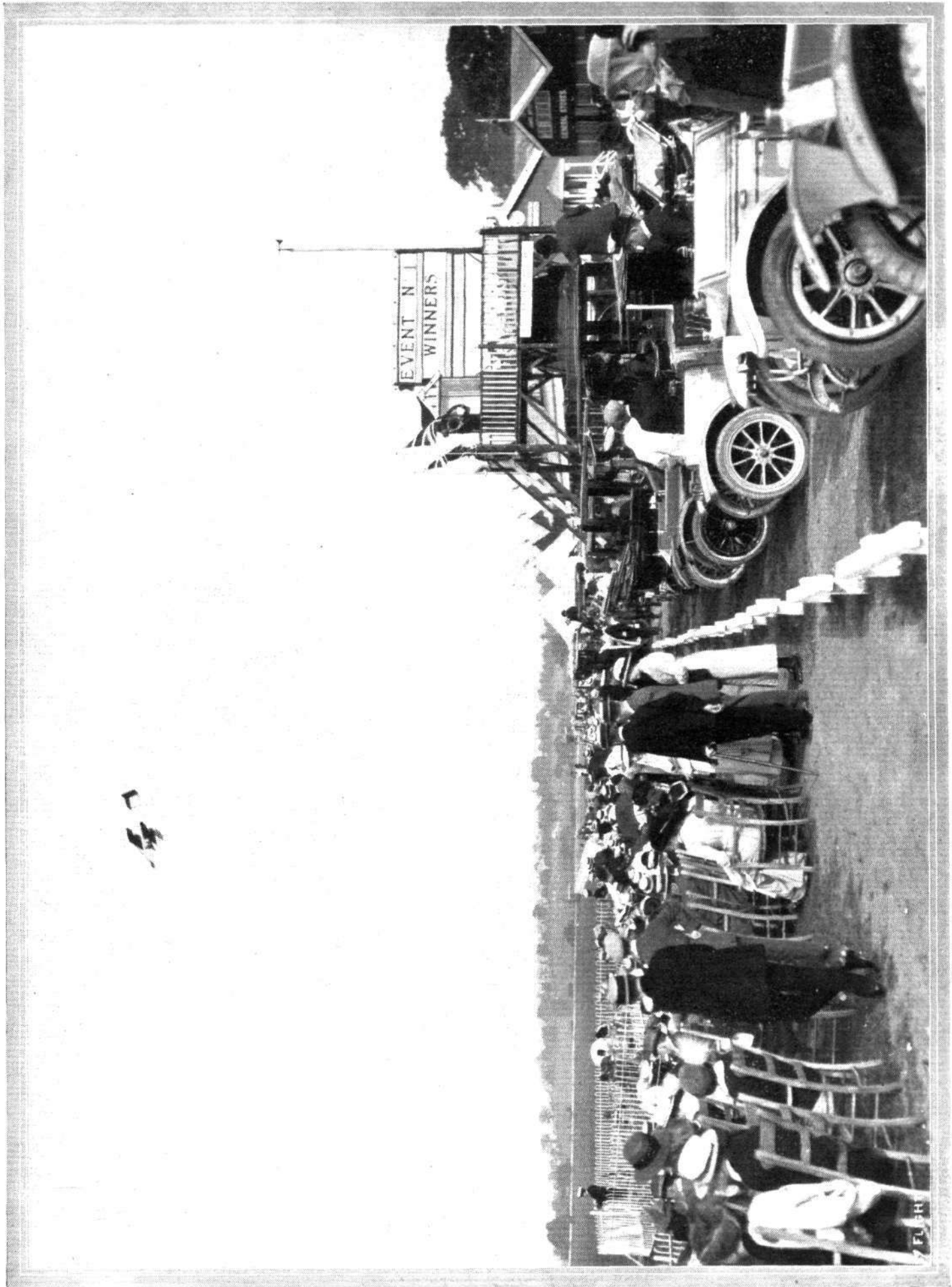
Windy all day Wednesday and again all Thursday morning. At 7.45 p.m. Merriam test, taking Capt. Jackson, (new pupil) as passenger, very bumpy. Bendall made test and found it too bad for further flying. Friday no flying all day owing to wind.

Merriam testing two machines, Saturday, at 4.30 a.m., then up behind Lieut. Mead on straights, this pupil then alone for first time doing quite well. Lieut. Darley doing circuits and making good landings. Merriam then behind Lieuts. Lewis and Roche on straights and circuits. Then up with Capt. Jackson, who had control at intervals. Lieut. Mead doing circuits for first time splendidly with neat landing. Lieut. Darley circuits and figure eight in good style and landing quite well. Merriam up with Lieuts. Roche, Lewis and Capt. Jackson, sitting behind all pupils. Mr. Richard Powell solo. This pupil is flying quite well, and after a little more landing practice will be ready for his ticket. Lieut. Darley figure eights quite well. Lieut. Mead tried, but soon come down owing to it becoming bumpy. Merriam then gave all pupils another turn each, giving them some experience in a wind. Merriam up with Capt. Evans, who has decided to join the school. Merriam winding up a good morning's work by taking up Head Mechanic Martin for a flight. At 5.30 p.m., Merriam testing, then up with Lieut. Lewis. Later with Capt. Evans (new pupil). Up behind Capt. Jackson twice, and then behind Lieuts. Roche and Lewis. Lieuts. Darley and Mead a good solo. Merriam up with Capt. Corcoran (prospective pupil).

Sunday, Merriam exhibition flight, then up with Lieuts. Lewis and Roche and Capt. Jackson. Afterwards Lieut. Mead and Mr. Richard Powell circuits each. Later, Merriam testing engines and finishing up with a solo. Darkness prevented further flying.

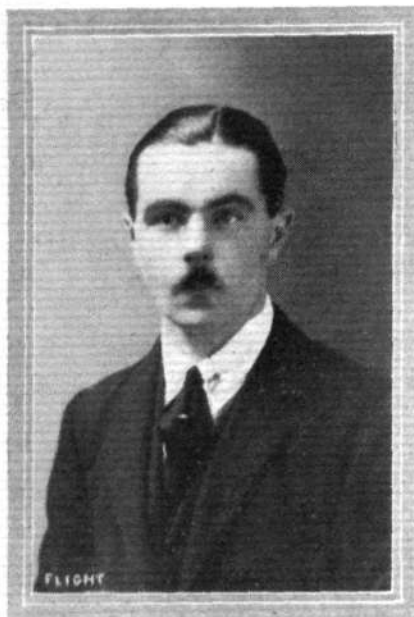
Howard-Flanders School.—Saturday last, Dukinfield Jones took out biplane, now fitted with 65 h.p. Isaacson all steel and British-built engine, for tests, and after a few straights, did several circuits at 600 ft. In evening flying again for nearly half an hour.

Early Sunday, Jones took biplane up and reached 550 ft. in first



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The big crowd watching the flying at Hendon Aerodrome. Manton is seen in the air.



Lieut. B. Fitzgerald Moore, who has just obtained his pilot's certificate at Grahame-White School at Hendon.

Saturday evening, Knight, Mr. Newton-Clare, and Mr. Elsdon on No. 2 mono., straights. Paterson on biplane No. 20, solo, and with Mr. Webb. Knight on No. 20 with Mr. Webb. Knight on No. 21 biplane, solo and with passenger.

In afternoon, Sunday, Knight on biplane No. 21 solo and with passenger. Paterson on biplane No. 20 solo and with passenger. Knight with Mr. Joubert de la Ferte.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Monday, last week, no school work was possible owing to the high wind, but by 7 p.m. the wind went down enough to let Sir Bryan Leighton practise for 15 mins. at straights, and afterwards circuits with Instructor Noel in the passenger seat. Wednesday, Thursday and Friday, a strong westerly wind prevented pupils getting any practice.

W. H. Ewen School.—On Monday, last week, the school was out at 5 a.m. under the instruction of M. Baumann. After test flight on 35 h.p. Caudron No. 2 he handed the machine over to Mr. T. L. Holbrow, who was rolling and hopping, and Capt. Jenings, who was doing straight flights. The school was again out at 3.30 p.m. Mr. Turner was up testing a new 45 h.p. Anzani-Caudron biplane. He afterwards made a test flight on the 35 h.p. Caudron

minute, remaining at this height for quarter of an hour. After filling up, he repeated this performance. In evening, up half hour, finishing with spiral *vol plané* from 1,000 ft.

Monday, early morning, Jones up at 1,200 ft. for quarter of an hour and again for half an hour, doing right and left turns.

Vickers Flying School.—Monday evening, last week, Knight test on No. 3 mono. Mr. Elsdon straights. Paterson test on biplane No. 20. Knight with Mr. Webb, then Mr. Webb solo circuits. Mr. Paterson with prospective pupil. Knight test on No. 2. Tuesday, in the evening, Knight test on biplane 20, then with Lieut. Smith. Too windy for pupils' solo.

Saturday when M. Baumann made a flight on the 45 h.p. Caudron, but found it too windy for pupils. At 5.30 a.m. the wind dropped a little, and M. Baumann made a test flight on 35 h.p. Caudron No. 2. He then gave Mr. W. Watts his first instruction in rolling. Mr. T. L. Holbrow was rolling, and Capt. Jenings and Mr. Jagenberg doing straight flights on same machine.

On Sunday, the pupils were out at 5 a.m. under the instruction of M. Baumann. After test flight on 35 h.p. Caudron No. 1 he handed machine to Messrs. Strange and Goodden, who were making short flights. On No. 2 Messrs. de Havilland and Jagenberg doing half-circuits, Capt. Jenings straights and Mr. Holbrow rolling.

Temple School.—The weather conditions have been against pupils all last week. On Saturday afternoon George L. Temple was out giving exhibitions in good style. Late in the evening he made a cross-country flight. On Sunday he was giving exhibitions on the Caudron, terminating the day with a flight over the Golders Green district at 500 ft., finishing with a spiral *vol plané*. On Monday, at 5 a.m., after testing the air, he sent R. Penny up for circuits. A. Vaile had 12 mins. on turns, and M. Lance flew two circuits in very good style. This pupil is now ready to take his certificate. G. L. Temple again flew for 10 min.

Salisbury Plain.

Bristol School.—Monday, last week, flying was not possible in the morning, weather bad. Pixton first up in the evening, giving three biplane flights to Capt. Murphy and Lieut. Bateman. Pizey tests of school biplane, side-by-side monoplane and tandem machine, then up giving flights on biplane to two passengers. Jullerot test of another school tandem monoplane, and a side-by-side monoplane, then for biplane tuition with Capt. Murphy, Capt. Buckland, Surgeon Hitch, R.N., Lieut. Berionade and Lieut. Pascanu. Lieuts. Pascanu and Berionade good solos on tandem monoplanes, Capt. Popovici being out for excellent flights on 80 h.p. tractor biplane. Pizey for solo in 80 h.p. tractor biplane, and Sippe for test on tandem with Surgeon Hitch as passenger, landing in semi-darkness, guided by petrol flares.

Flying impossible Tuesday morning, owing to weather conditions. Pizey for trial in the evening, but still found weather rather bad. Later, after another trial, with Surgeon Hitch twice, Capt. Murphy, Lieut. Spence, Lieut. Bateman, and Mr. Courtney twice. Lieut. Berionade two good solos on the tandem monoplane, and Capt. Popovici completed his height test for the superior *brevet*, later going for another solo. Pixton with Surgeon Hitch on biplane and Lieut. Spence twice, Lieut. Bateman and Mr.



Mr. H. G. Russell, one of the new pilots who have just passed for their *brevets* at the Grahame-White School at Hendon.



Mr. E. T. Newton-Clare, who secured his *brevet* on a Vickers biplane at Brooklands in fine style on July 17th.

No. 1, and then handed machine to Messrs. Strange, Goodden and Gist, who were doing circuits. M. Baumann made a test flight on No. 2, and then handed machine to Messrs. Jagenberg and de Havilland, who were doing straights and half circuits in good style, while Capt. Jenings was making good improvement in straight flights and Mr. T. L. Holbrow rolling well. Later Mr. Beatty made a straight flight on same machine. The school was out till dark.

M. Baumann made a flight round Edgware, on Friday, on the 45 h.p. Caudron.

The school was out at 5 a.m. on



Mr. J. H. W. S. Dalrymple-Clark, who passed for his Royal Aero Club certificate on a 35 h.p. Caudron at the W. H. Ewen School, Hendon.

Courtney. Jullerot up for trial tandem monoplane and biplane tuition to Lieuts. Bateman and Spence and Mr. Courtney. Jullerot trial in the evening found rather bumpy. Lieuts. Berionade and Pascanu good mono. solos, Busted later giving same pupils considerable tractor biplane tuition.

In the morning, Jullerot for test on tandem monoplane, Wednesday, but practically gale blowing, and flying impossible.

Thursday, fog too thick for flying in the morning. Pizey for test in the evening, then biplane tuition to Capt. Murphy, twice, Lieut. Bateman, twice, and Mr. Courtney, afterwards test of

"Sociable" monoplane. Good biplane solos by Surgeon Hitch, two, Capt. Buckland and Lieut. Pascanu. Jullerot again out with Lieut. Bateman and Mr. Courtney and for tests of tandem monoplane and side by side. Pixton, biplane tuition to Lieut. Bateman, Mr. Courtney and Capt. Murphy, all long flights with landing practice. Pixton solo on 80 h.p. tractor biplane and later in same machine with Lieut. Berionade. Messrs. Garnett and Delaplane good monoplane solos followed by Lieuts. Pascanu and Berionade on tandem monoplanes. Capt. Popovici two good solos on 80 h.p. tractor biplane, in one flight reaching 2,700 ft.

THE SIXTH LONDON MEETING, HENDON.

THREE days of good flying were participated in by large crowds at Hendon last Saturday, Sunday and Monday, the racing on the Saturday and Monday being particularly good. G. W. Beatty, the crack American flyer, and his Wright biplane were unfortunately absent from the proceedings, as this pilot's machine is undergoing a thorough overhaul. The features of the first day's meeting were the magnificent work of E. Marty and E. Baumann. The former—who is not an entire stranger at Hendon, having, for Mr. Ewen, flown the Caudron machines, of which he is one of the finest pilots—was piloting the Grahame-White-Morane-Saulnier monoplane in the speed handicap. Baumann put up his first speed race round the course and, although he did not win, he handled the biplane in a masterly fashion, his bankings at the pylons being reminiscent of Ewen's last year. The proceedings opened at 3 o'clock on Saturday with a flight by W. L. Brock on the 75 h.p. Deperdussin, and N. Spratt followed immediately after on the 60 h.p. Deperdussin (Flying Rocket). The next out were Marcus D. Manton and R. Carr, both on Grahame-White 'buses. E. Marty then gave an exhibition on the 50 h.p. Morane-Saulnier, during which he executed some splendid evolutions. Louis Noel on the G.-W. Maurice Farman, E. Baumann on the Caudron, and Pierre Verrier on the Aircraft Maurice Farman next ascended, one after the other, and a little later on, Carr, on the G.-W. 'bus, and G. L. Temple on his 35 h.p. Caudron, got going. As they rose, a biplane appeared overhead and made a spiral descent into the aerodrome. It was a 70 h.p. Short navyplane, No. 34, type S 61, piloted by Lieut. Parker, R.N., who was accompanied by an observer. E. Baumann on the Caudron, R. Slack on the Morane-Saulnier, and W. L. Brock on the 75 h.p. Deperdussin, then started for the altitude contest for the I.C.S. Trophy. Slack made very wide circles, on two occasions passing above St. Albans. The small monoplane was soon lost to view, and was not seen again until descending into the aerodrome some 20 mins. after the start. Slack attained an altitude of 8,000 ft. which gained him first place, W. L. Brock being second with a height of 2,950 ft., and Baumann third with 1,200 ft. to his credit. During the contest, Noel, Verrier, and Manton took up passengers on the Maurice Farman and G.-W. 'bus respectively,

and Carr was also up at the same time on the other G.-W. 'bus. Just before the first heat of the speed handicap, Spratt went up again on the 60 h.p. Deperdussin. There were five starters in the

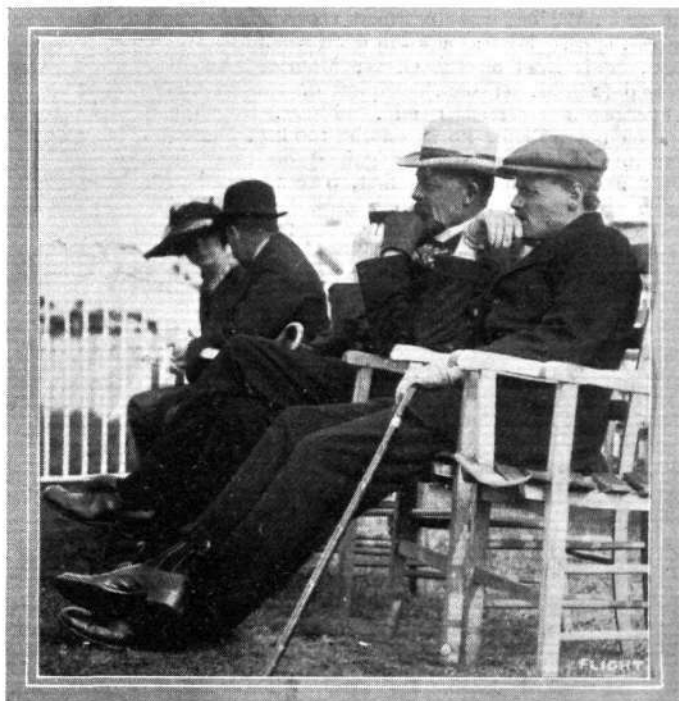
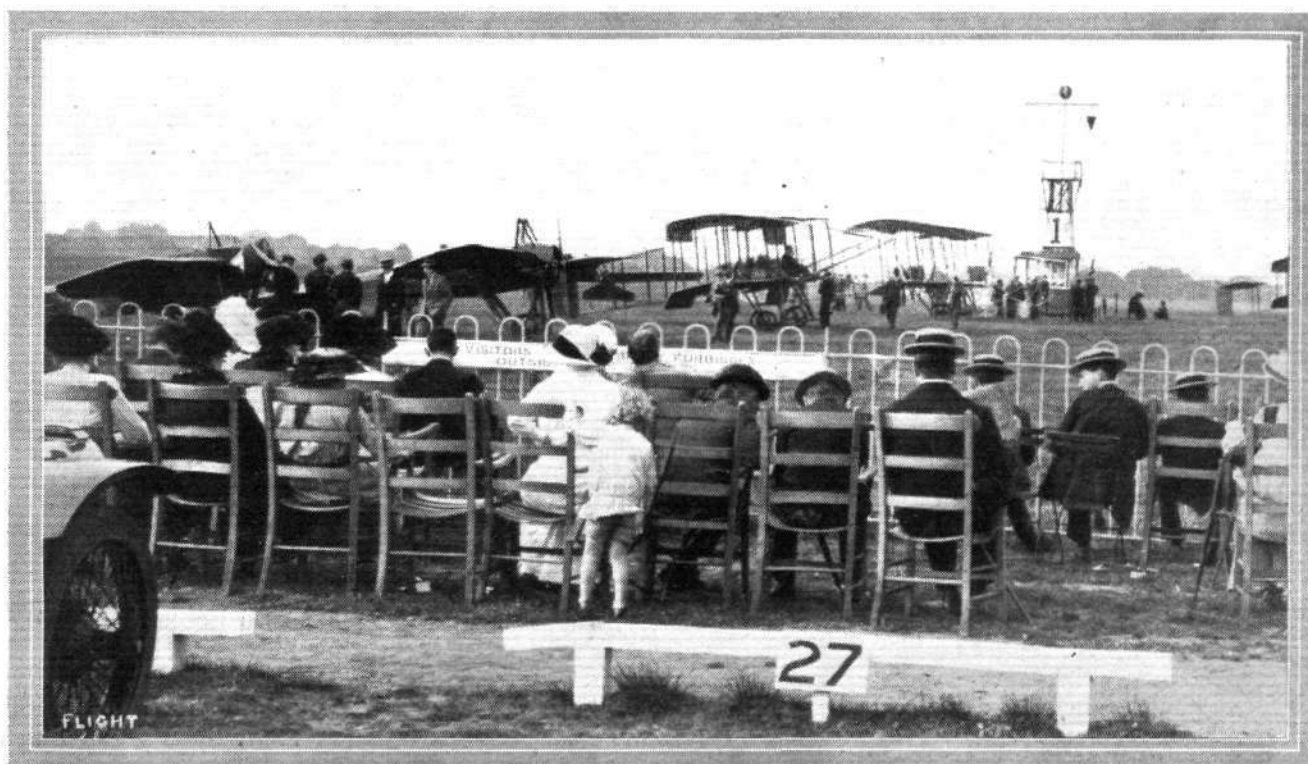


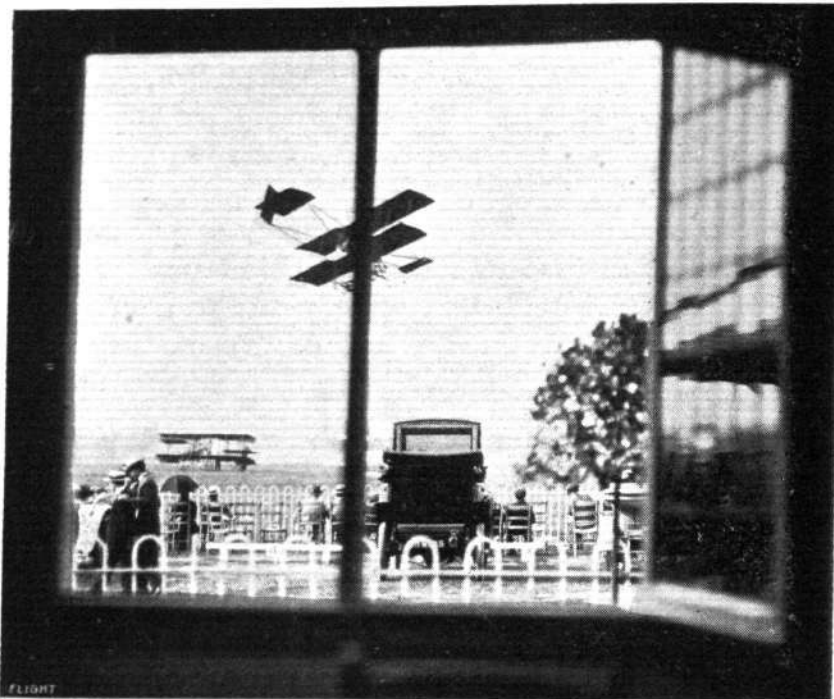
Photo by Butler and Ward, Chiswick.

The Duke of Sutherland and Lord Desborough watching the flying at Hendon Aerodrome.



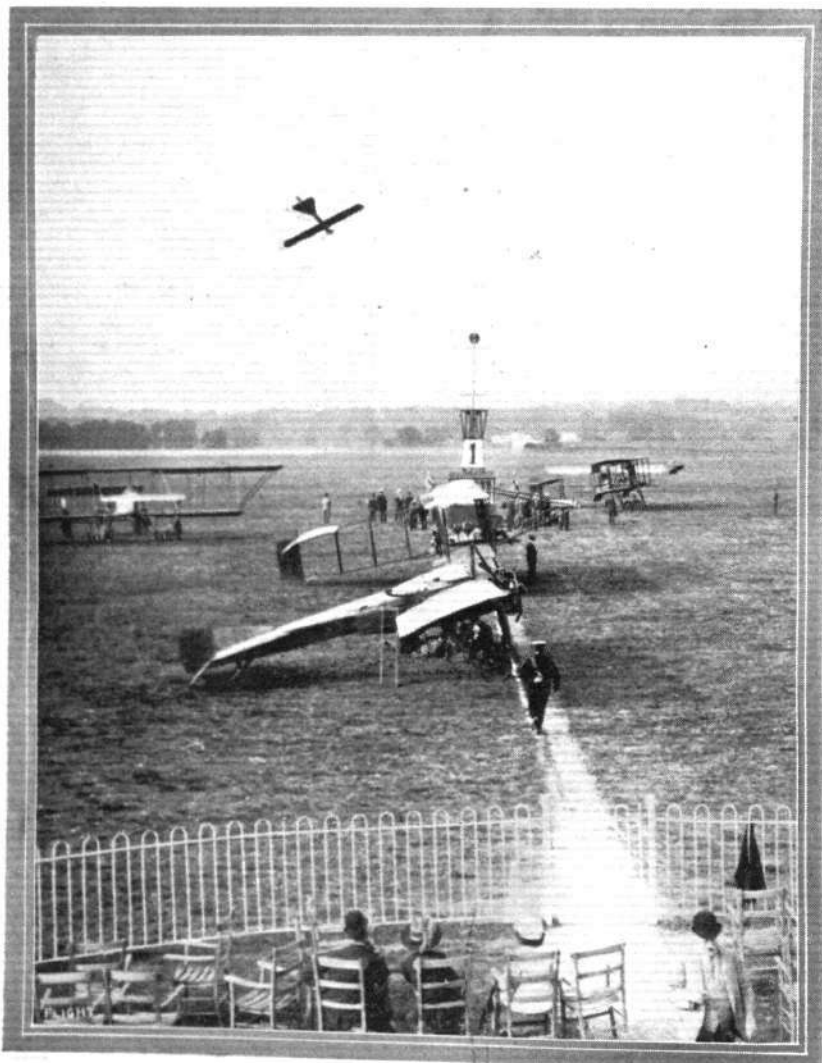
The starting in Heat 1 for the Speed Handicap at Hendon on Saturday.

first heat (6 laps) of the speed handicap, as follows: Marcus D. Manton on the G.-W. 'bus (3 mins. 54 secs.), E. Baumann on the 45 h.p. Caudron (3 mins. 19 secs.), P. Verrier on the Maurice Farman (1 min. 29 secs.); W. L. Brock on the 75 h.p. Deperdussin (1 min. 7 secs.), and E. Marty on the 50 h.p. Rhone Morane-Saulnier (scratch). Marty came in an easy first, having banked in a wonderful manner at the pylons. Verrier was in second with Brock two seconds behind, and Baumann, who took his mount round in fine style, lost third place by four seconds. Manton experienced trouble during the fifth lap with the backwash of the machines in front and found himself going for No. 2 pylon, and so did the best thing he could under the circumstances—came down. In the second heat, R. H. Carr on the G.-W. 'bus was limit man, receiving 5 mins. 6 secs. start. He was a lap in hand when the next man, Louis Noel on the G.-W. Maurice Farman started (2 mins. 41 secs.). Spratt on the 60 h.p. Deperdussin received 1 min. 28 secs. from the scratch man, Lieut. Porte, on the 100 h.p. Deperdussin. The latter steadily gained on those in front and crossed the line first, 9 secs. ahead of Carr. Spratt was third with 7 secs. between him and Carr. Lieut. Porte was unable to fly in the final owing to lubrication troubles, so N. Spratt took his place. The final of eight laps resulted in a fine finish, the limit man—Carr—retaining the lead all the time, but with the others following up close behind. Marty, who was at scratch, only managed to pass one of his rivals—Spratt—but on the line was a bare second behind Verrier, the second man in. The result of the final heat was as under:—



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As the flying is seen at Hendon Aerodrome from the Press Club Window.—Mr. Manton is just passing across the line of sight.



READY FOR THE NEXT RACE AT HENDON AERODROME.—
In the air is Spratt on the Deperdussin.

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Speed Handicap. 8 laps (12 miles).

	Start.	H'cap Time.
	m. s. m. s.	m. s.
1. R. Carr (50 h.p. Grahame-White)	7 8	17 25
2. P. Verrier (70 h.p. Maurice Farman)	2 24	17 44
3. E. Marty (50 h.p. Morane-Saulnier)	...	scratch 17 45
4. N. Spratt (60 h.p. Deperdussin)...	2 19	17 49

After the speed handicap, several further exhibition flights were put up by Manton, Noel, Brock, Marty and Spratt, the first three taking up passengers.

On the Sunday, fine weather brought many visitors to the aerodrome, and from early in the afternoon until late in the evening a large number of exhibition and passenger flights were witnessed. Manton opened the proceedings with a very fine display, and during the afternoon he took up many passengers. The following pilots contributed to the afternoon's enjoyment:—E. Baumann on the Caudron, R. H. Carr on the 50 h.p. G.-W. 'bus, Marty on the 50 h.p. Rhone Morane-Saulnier, Louis Noel on the G.-W. Maurice Farman, N. Spratt on the 60 h.p. Anzani Deperdussin, G. L. Temple on his 35 h.p. Caudron, and Pierre Verrier on the Aircraft Co.'s Maurice Farman.

Bank Holiday brought a greater number of people than ever up to the Aerodrome, but a great change took place in the weather, a strong north-easterly wind having sprung up, whilst the sun, which had been much in evidence the two days previous, was hidden by low clouds. The first event down on the programme, a bomb dropping competition, had to be abandoned, as the wind rendered an event of this description somewhat difficult. However, the cross-country handicap for the "Desborough" Challenge Cup presented by Lord Desborough, was flown under exciting conditions, and demonstrated in a graphic manner the wonderful advance aviation has made. Five machines started, and three finished the course, which was to Bittacy Hill and back four times, a total distance of about 16 miles. All the competitors were blown about by the wind in an alarming manner, and it was only the superior strength and high speed of the three finishing machines which enabled them to cross the home line, which they did within a few seconds of each other. The two lower-powered G.-W. biplanes, piloted with great skill by Carr and Manton, finally had to surrender to the elements, although Manton, had only one more

lap to complete. The starters in this event were R. H. Carr on the G.-W. 'bus, Marcus D. Manton on a similar machine, P. Verrier on the Maurice Farman (4 min. 14 secs.), N. Spratt on the 60 h.p. Deperdussin (4 mins. 9 secs.), and Lieut. Porte on the 100 h.p. Deperdussin (scratch). As stated above, Carr and Manton retired, the former after completing two laps, and the latter after three. Verrier gained nearly 4 secs. on Spratt, and came in first, whilst Lieut. Porte gained considerably on both, coming in second, only $\frac{3}{4}$ sec. ahead of Spratt. The speed handicap for the Mappin and Webb Trophy also provided good sport, the finishes being remarkably good. The limit man in the first heat was Carr on the G.-W. 'bus (3 mins. 53 secs.), Verrier on the Maurice Farman came next (1 min. 13 secs.), with Lieut. Porte on the 100 h.p. Deperdussin (scratch). The latter obtained first place from Carr by $2\frac{1}{2}$ secs., Verrier being third, 2 secs. behind Carr. In the second heat, Spratt failed to overtake Noel by 2 secs. The final provided a fine finish, Carr, the limit man being overtaken by Noel, who started second, only a short distance from the finishing line, whilst Lieut. Porte drew up alongside Carr on the line, being only a matter of inches behind. The results of the two events are given below. In addition to the racing, numerous exhibition and passenger flights were made by the aforementioned pilots, and also E. Baumann and G. L. Temple on their Caudrons.

Cross-Country Handicap for Lord Desborough's Trophy. 16 miles.

	Start.	Handicap
	m. s.	m. s.
1. P. Verrier (70 h.p. Maurice Farman) ...	4 14	28 8
2. Lieut. Porte (100 h.p. Deperdussin) ...	scratch	28 16
3. N. Spratt (60 h.p. Deperdussin) ...	4 9	28 16 $\frac{3}{4}$

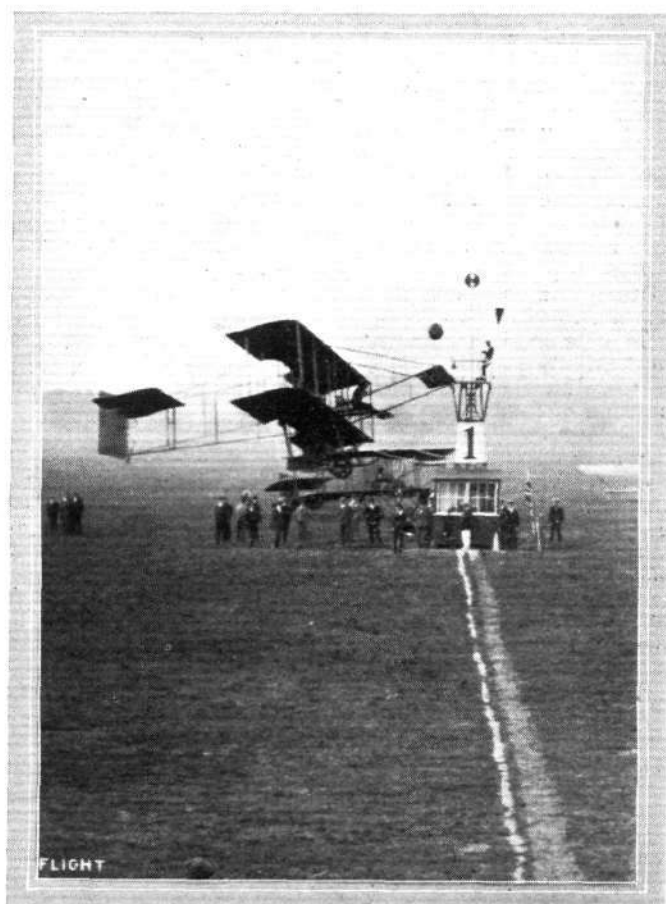
Speed Handicap. 8 miles (12 laps).

1. L. Noel (70 h.p. Maurice Farman) ...	2 57	13 20
2. R. H. Carr (50 h.p. Grahame-White) ...	5 40	13 26
3. Lieut. Porte (100 h.p. Deperdussin) ...	scratch	13 26



IMPORTANT DECISIONS AT F.A.I. MEETING.

THE annual conference of the Fédération Aéronautique Internationale, which was held at Scheveningen on the last three days of



Mr. Carr winning his first race at Hendon Aerodrome in the Speed Handicap on Saturday.

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Photo by Butler and Ward, Chiswick.

Lord Desborough and his daughter inspecting the prizes with Mr. Grahame-White at Hendon Aerodrome.

last week, produced some important decisions. Eleven countries, Great Britain, France, Germany, United States, Austria, Belgium, Holland, Hungary, Italy, Russia and Switzerland, were represented and one of the first acts of the Federation was to accord recognition to the Aero Club of Portugal.

Cross-country Records.—It was decided that in future non-stop journeys in a straight line across country should be recognised as distance records, but such should not be recognised for duration records.

Nationality of Records.—For the third time, Germany asked that records should be credited to the nationality of the pilot and not to the country where they were made. The idea was again rejected, it being pointed out that the country of origin of the machine was, if anything, more important than the nationality of the pilot.

Dirigible Pilots' Certificates.—The conditions were revised on the proposition of Germany to come into effect on January 1st next. The minimum age for a pilot is fixed at 21 years, and in his own country he will be required to make 20 ascents, or in a foreign country 25 ascents, to qualify for a certificate.

Aeroplane Pilots' Certificates.—On the proposition of Austria, the regulations for aeroplane pilots' certificates were considered by a sub-committee, and it was decided that after January 1st next it should be necessary for pilots to mount 1,000 metres and then make a *vol plané* descent.

Passenger Records.—It was decided that in attempts for passenger records actual passengers must be carried and not an equivalent weight in ballast.

Gordon-Bennett Race, 1914.—Following consideration of the report of the sub-committee appointed at Brussels, it was decided that the 1914 race for the Gordon-Bennett Trophy should be over a distance of 200 kiloms., the course to be at least 5 kiloms. round. It was also decided that each competitor should make a preliminary test to show that on an out and home course of 2 kiloms. the machine is capable of an average speed of at least 70 kiloms. an hour. Three attempts will be allowed to each competitor, and the machine must maintain an altitude of at least 30 metres.

Balloon Matters.—It was decided that the capacity of balloons in competitions should be checked by an expert engineer, and on the suggestion of France it was resolved to establish in each country a class of expert aeronauts.

On the second day the conference was presided over by Mr. Roger Wallace, K.C., who is a Vice-President of the Federation. Count de Castillon de St. Victor having resigned his position as secretary on account of a forthcoming absence from France, M. Paul Tissandier was elected to fill the vacancy, while M. Ernest Zens was elected to succeed M. Tissandier as Hon. Treasurer.

OUR SERVICE AIRCRAFT AND THE GOVERNMENT.

THE following is the full text of Mr. Joynson-Hicks' letter to the Press, dated from Holmbury, July 30th, with which we deal editorially elsewhere, as also the report of the debate in Parliament upon the same subject, which follows Mr. Joynson-Hicks' communication. We referred briefly to this matter last week:—

Sir,—You will remember that on June 5th a discussion took place in the House of Commons between the Secretary of State for War and myself with reference to the number of our Army aeroplanes, and as to the efficiency of the Royal Army Flying Corps as a fighting organisation, in consequence of which Col. Seely gave me permission to inspect the aeroplanes belonging to the Army.

In company with my friend, Mr. Sandys, the member for the Wells Division of Somerset, I visited both Salisbury Plain and Farnborough for the purpose of making my investigation, but unfortunately was unable to give my report to the House of Commons before I was taken ill. This report will be given in detail by Mr. Sandys to-day, but I venture, with your permission, to make some comments thereon.

The controversy resolved itself into two branches, first, with regard to the airship squadron; second, with regard to the aeroplane squadrons, and the charge I made against the Secretary of State amounted, in fact, to giving information to the House of Commons which was not accurate, and I have either to substantiate that charge or to withdraw it and make a profound apology.

With regard to airships, on March 19th, 1913, Col. Seely said in the House:—

"We decided that the Army should have small dirigibles that could be packed up in boxes and sent wherever they are required. These we have got. We have now three; the 'Beta,' the 'Gamma,' and the 'Delta' are now in our possession. These dirigibles are superior to any other kind of portable airship."

These statements are definite. What are the facts?

When I went to Farnborough I found the "Beta" in working order, but by common consent she could not be of the least use in military operations against a European army, for one reason because *she cannot rise high enough to be out of rifle range*, though she might be useful against savage tribes, largely by way of frightening them.

The "Gamma" we did not see, but I assume she is efficient.

The "Delta" is our largest military airship, and I ventured in my speech on June 5th to challenge the utility of this ship, stating that it had never done a prolonged flight (though many Zeppelins had flown for forty-eight hours), and this statement was not dealt with by Col. Seely in his reply.

When I went to Farnborough I found that *this machine had never flown five hours at a stretch, had not even then completed its trials, has had repeated accidents, and had not been taken over by the Royal Flying Corps from the Aircraft Factory*—a somewhat damaging comment on the Secretary of War's statement that these three airships were now in our possession, and ready to be packed up in boxes and sent wherever they were required.

Two at least out of the three of our Army airships were thus quite inefficient for use in war against a European force.

With regard to aeroplanes, the efficiency of the Air Corps depends first upon the position regarding repairs, and, second, upon the position regarding numbers.

In reference to repairs, I desire again to reiterate the essential inability of semi-trained privates to deal with these intricate and delicate machines, the repairs of which should be entrusted to the mechanics of the firms who made each machine. The head of one of the biggest manufacturing firms told me recently that he pays wages of from £8 to £10 a week to his best mechanics.

I do not here say that the accidents to Army airmen have been greater than those in foreign countries—it is not necessary for my purpose—but I do say that, with a proper system of inspection and repair, some, at least, of these might have been prevented.

The public will remember the death of Lieut. Desmond Arthur at Montrose on May 27th, when flying BE biplane No. 205.

This is a machine about which, prior to my speech in the House, I had heard very grave rumours, but when I mentioned these rumours I was overwhelmed by Col. Seely in his reply that the actual machine was flown all the way from Farnborough to Montrose, was carefully examined before and after, and that a machine which could fly from Farnborough to Montrose in bad weather was probably the safest machine to fly upon.

But what are the facts with regard to that flight from Farnborough to Montrose?

It so happens that this particular machine took five days making its flight, though a sister machine flew past it and did the journey in one day (this Col. Seely did not mention in his eulogy of the machine), and my information is that it took so long because it was

known not to be a good machine; and the officer naturally flew it with very great care and did not go up in bad winds; and when the young officer two days afterwards took the machine out, the accident which we all deplore took place.

In his speech on June 5th, Col. Seely told the House that the Air Corps keep a most careful record of any accidents, and that there was no record of any accident to this machine, but when the Royal Aero Club make their investigation, they find that the accident was caused by the failure of a faulty repair in one of the main spars of the machine, and that the repair was so badly done "that it could not possibly be regarded as the work of a conscientious and competent workman."

No greater condemnation of the management of the Air Corps on its repair side could be made than this report, unless it were the report of the same committee on the machine which caused the death of Lieut. Rogers Harrison, on April 28th, to the effect that the aircraft "had structurally deteriorated from one cause or another since it was originally built in 1911, and that its condition at the time of the flight was precarious."

Col. Seely told us repeatedly that all machines are carefully examined before each flight.

So long ago as December 3rd, 1912, a very important Departmental Committee of the War Office, under the Chairmanship of Dr. R. T. Glazebrook, C.B., F.R.S., and including General Henderson, the new head of the Aeronautic Department, Mr. Mervyn O'Gorman, the head of the Aircraft Factory, and Major Brooke-Popham and Major Sykes, two of the senior officers of the Flying Corps, made a unanimous report on the subject of accidents, one of which was that a sufficient number of permanent officials should be appointed to inspect and report on the machines at regular intervals to the officer directing the work in the air, and to examine and report on every accident and repair; also that an engineer of extensive technical experience should be appointed as Inspector of Engines, the condition of which is of paramount importance to the safety of pilots.

Can it be believed that in spite of this unanimous report of his own Committee, Col. Seely has entirely disregarded it, and has to this day made no appointment, which might at least have saved the lives of two of these officers!

The real secret of keeping the machines in efficient repair is to be found in the principle of one man one machine.

As more than one officer has said to me: "How can I take a personal interest in the machine which I use in common with four or five of my colleagues, when I know that to-morrow morning it will be used for training a raw non-commissioned officer, and will spend most of its time bumping along the ground rather than flying in the air?"

There must be a complete separation between the school or training machine and the fast flying war machine. It would be nothing short of criminal to send our pilots in time of war to fly on machines which have been battered about in school work.

But this principle needs many more machines, and this brings me to the other portion of my controversy relating to the number of machines.

In order that it may be clear what the challenge was, may I refer to Col. Seely's speech on March 19th. He said:—

"We have in possession of the War Office 101 aeroplanes capable of flying."

On March 24th he said:—

"I say on my full responsibility as a Minister that we have got 101 aeroplanes; I understand the honourable gentleman to say that this is not true—that is a very unusual statement to make; we certainly have got 101 aeroplanes."

I proceeded that by aeroplanes that could fly I meant, of course, efficient aeroplanes, and later on that evening, when he came to reply to this speech, Col. Seely announced that he had been telephoning to his experts since I spoke, and he found that on the basis of my test, the number would be 87, but in order to be on the safe side, "I say it is over eighty."

I ventured to give a test—viz.: Machines that could rise 3,000 feet in the air and fly 50 miles an hour and be ready to go to war to-morrow morning. He then added that *by the end of May he would have 148 machines, of which at least 130 would come up to my standard.*

In reply to a question in the House on June 4th, Col. Seely announced that he had "126 aeroplanes, of which 31 were in various stages of repair"; this makes 95 machines which I presume might be considered efficient.

On July 12th, in further debate on the Army Estimates, I challenged the Secretary of State for War to produce 120 machines—failing that, 90, or even 80 machines—which could efficiently fly.

In accepting this challenge, Col. Seely said (Hansard, Col. 1107):

—"We have now got 120 machines—I take only those in first-class order."

Before going to make my inspection, I asked the War Office to send me a list of the machines they had. To my astonishment, and I must confess somewhat to my amusement, I received the following list:—

AT THE CENTRAL FLYING SCHOOL.		Monoplanes ...	...	...	11
		Damaged ...	...	...	4
MONTROSE.					
Biplanes—		Biplanes—			
Ready to fly ...	20	Ready to fly ...	...	...	4
Under repair ...	5	Under repair ...	...	...	4
Awaiting authority to strike off ...	2	Wrecked ...	...	...	1
Monoplanes ...	2	ROYAL AIRCRAFT FACTORY.			
AT LARKHILL.		Biplanes—			
Ready to fly ...	9	Experimental ready to fly ...	...	...	3
Under repair ...	2	Under test ready to fly ...	...	...	7
Damaged ...	2	Monoplanes ...	...	...	12
AT FARNBOROUGH.		Under repair ...	...	...	2
Ready to fly ...	10	Under reconstruction ...	...	...	9
Under repair ...	11				
					120

From this it will be seen that when they come to put them down in writing, within a week of Col. Seely's statement that he had 120 machines all in first class order, or of his other statement:—126 aeroplanes, of which 31 are under repair, he only claimed (apart from monoplanes, which are under a ban) to have 53 ready to fly.

Of this 53, 10 are experimental machines and machines under test in the factory; some of these I saw flying, but they were only being flown by mechanics in the factory, not by Army officers, and had not been handed over to the Flying Corps; in fact, were not any more than test machines in a private manufacturer's factory.

It is a startling commentary on War Office methods that the Secretary for War included in his aeroplanes in the figures which he from time to time presented to Parliament 9 total wrecks "awaiting authority to strike off," etc. We saw some of these, literally heaps of broken spars and scrap iron, which had been swept up into corners of various sheds.

These figures, without any inspection of the machines themselves, show that the total claim of machines "ready to start for war to-morrow morning," which has been the whole basis of our discussion in the House, is 43, but included in this are 20 machines which are being daily used at the central flying school for teaching beginners, and, of course, being daily damaged.

I ventured to ask some of the officers of that school whether some of these machines could be classed as war machines. The reply was:—"Yes, certainly, some of them." "But what would happen to your school if we took away the best machines for war?" Answer: "The school must close, and your supply of officers to take the place of those killed or injured would stop."

Obviously, therefore, if our organisation demands a Flying School, as it admittedly does, it is unfair to count the school machines as effective machines which can go to war to-morrow; and this reduces the number of such efficient war machines to twenty-three, which is about the number—ridiculous as it may seem—I have from time to time suggested.

Col. Seely may, however, claim that the monoplanes are effective for war purposes. We inspected them all, but it is obvious that those of them which were delivered prior to the decision not to fly them in September last are clearly unfit for use without full overhaul. The fabric of many of them is worn, and it is admitted by most experts that aeroplanes unused for nine months become inefficient.

Moreover, none of the officers have had practice since September in flying this class of machine, and therefore, even if they could be put into repair, there are only a very few officers—perhaps below half a dozen—who could fly them prior to that date who would be able to take up this branch of the work.

It must be understood that there are few who learn to fly beyond more than one or two types of machine thoroughly. Beyond this some of the monoplanes are brand-new machines of a type not yet flown by our Army, delivered quite recently under old contracts, and embody all the defects which caused them to be banned in September last; and frankly, some of the high officers state that they would not in times of peace send up an officer in them, though they might in time of war—a fairly serious comment on the state of affairs in the Flying Corps, that owing to lack of safe machines we should be compelled in time of war to jeopardise the lives of our officers and the whole safety of the Army by sending men up in machines that are, on their own admission, unsafe.

Let me now test Col. Seely's position a little more in detail. He

has at present three squadrons on a war footing, to use his own expression of March 4th, 1912, "always on a war footing." This would involve 18 machines per squadron or a total of 54 machines. As a matter of fact, it is generally considered that 21 per squadron is a right number, or a total of 63.

In the House I stated that there were 8 machines at Montrose, of which 6 were in flying order. I now find from the War Office returns that there were at Montrose 9 machines—4 in flying order, 4 under repair, and 1 wrecked—or a position from an efficient point of view much worse than I stated.

We did not think it necessary to go to Montrose, because the figures were so small, and practically confirmed the statements I had made to the House. However, I think it right to say that on June 18th I received a further return from the War Office to the effect that there were 5 machines in flying condition at Montrose and 3 being overhauled.

Unfortunately, within a very few days of that statement I received information that two of those machines in flying condition had been broken—one beyond repair—and that the condition of affairs at Montrose may be summed up by saying: "There are at Montrose 11 or 13 officers 'scrambling' to fly on 3 machines, one of which is a training machine only."

With regard to No. 3 Squadron, Salisbury Plain, I stated in the House; that "there were 2 BE machines which need overhauling and are dangerous; that there were 4 Maurice Farman biplanes, 2 of which are without engines and need overhauling by the makers; that there were 4 Henry Farman biplanes, one of which is without an engine, being under repair, and one Avro biplane—a useful machine, but not very powerful." There were thus 11 machines, of which 9 are able to fly.

When we got to Salisbury Plain, having in our ears Col. Seely's statement that my figures were absurdities, we found ten machines. The two BE machines which I said needed overhauling were already being overhauled. Of the Maurice Farman machines, two of which were without engines, we found that one had a new engine put in the day before, and the other one had been sent away to the makers for repairs; the four Henry Farman; and two others, in regard to which, in reply to a question from my colleague, Mr. Sandys, the commanding officer said: "I do not regard them as good for war purposes."

I think on the whole my remarks on the Larkhill Squadron were more than amply justified.

With regard to the Third Squadron at Farnborough, there were, at the time of my visit, eleven efficient flying machines, most of which, however, are of a type which cannot fly more than fifty-four miles an hour when new, and rapidly settle down to forty-eight or fifty by the time they are a month old.

I do not want to take technical objection to Col. Seely's figures. It is sufficient for my purpose to accept his own figures of the machines he has ready to fly—obviously no others can be ready to go to war—but it is a grave question whether these machines are really fit for war without at least a very strong backing of the faster kind, when we find that during the last month a French airman flew to England at the rate of eighty-eight miles per hour, and another flew to Berlin at the rate of 120 miles per hour.

Of what use would our comfortable, easy-going school machines, flying at the rate of 48 miles per hour, be against an enemy armed in this manner?

I desire, in conclusion, to show clearly to the country the position in which we are placed, and to urge the Government to make greater provision for this essential arm of the service.

I gather from my conversations at Salisbury Plain and Farnborough that in order to keep 100 aeroplanes efficient and ready for war it is necessary to buy 300 additional machines, or the equivalent number of spare parts, each year.

In other words, that if you start with 100 efficient machines on January 1st, you will, if you use them in the ordinary way, have reduced them to 25 by the end of the year. This by reason of the number of inevitable accidents in the course of training and practice flights.

It must be remembered that no machine can keep in the air at a less speed than 40 miles an hour, and the landing at this pace, if there is the slightest mishap, causes very considerable injury to so frail a machine.

Beyond this, we have ascertained as a fact that if machines are being properly used at all, one-third of them must always be considered to be of necessity under repair.

To this Col. Seely may reply that many of these machines which we saw under repair would be back at work within a fortnight, but it is equally true that during that fortnight many of those now being used will be back in the repair sheds.

We saw, for instance, two new machines just delivered, which were both smashed up on May 31st, and while we were inspecting at Farnborough, a telegram was received that one of the machines

we had inspected as efficient at Salisbury Plain had been smashed at Brighton.

I do not propose to make further comment upon the facts which I have most regretfully to place before the public.

That a Minister holding the responsible position that Col. Seely does should have made statements to the House of Commons in regard to so vital a question as our preparations for war, which at the first touch crumble to pieces, is a

THE DISCUSSION IN PARLIAMENT ON JULY 30th.

MR. SANDYS said he desired to place before the committee the result of the investigations made by the member for Brentford (Mr. Joynson-Hicks) and himself into the subject of Army aviation, observing that Mr. Joynson-Hicks, who had been seriously ill, had not sufficiently recovered to be in his place on that occasion. The circumstances which led up to their visit to Farnborough and Salisbury Plain—already known to our readers—were then given by Mr. Sandys, who then continuing, said that communications passed with the right hon. gentleman as to an expert accompanying them on their visit. The right hon. gentleman refused, and also a request that the member for Hastings (Mr. Du Cros), who had considerable knowledge of these matters, should accompany them, was disallowed. Consequently his hon. friend and himself were obliged to conduct this investigation without any expert assistance.

Col. Seely: I would like to clear this up at once. As soon as I made the arrangements I handed over the whole matter to General Henderson. I never made any stipulations. Of course, I take full responsibility for what General Henderson did.

Mr. Sandys: I have got the letter here and will read it. It is signed by General Henderson and runs as follows: "The Secretary of State is not prepared to accede to the request that Mr. Du Cros should accompany you." The communication was addressed to Mr. Joynson-Hicks. As the right hon. gentleman refused the assistance of expert advice he was not now in a position to discredit any statement which Mr. Joynson-Hicks or he might make on the ground that neither was possessed of sufficient technical knowledge. He also wished to make perfectly clear the basis on which they arrived at the decision as to whether a machine could fulfil the requirements of the test or not, the test being that the machine was to be ready to fly at once, to fly 3 hours in the air, have a speed of at least 50 miles an hour, and be able to rise at least 3,000 ft. Now, it was obviously quite impossible for them to judge—as they were not experts—of a machine on the ground, whether it was capable of flying for three hours or of fulfilling the other requirements. Then if they had seen the machines in the air they should not have been able to judge. That was the disadvantage which they suffered by being deprived of expert assistance. As a matter of fact, it was not suggested that any of the machines they saw should be brought out and flown; and except three experimental machines they did not see any actually flown, and they did not like to take the responsibility of asking that the machines should be brought out and flown. The consequence of this was that they decided to abandon the requirements of flying for 3 hours, the rate of 50 miles an hour, and the ascending 3,000 ft. They decided to accept any machine as fulfilling the requirements of the test so long as the officer who was in the habit of flying the machine—and they were all paraded in the sheds for the purpose, as General Henderson said, of giving information—stated that in his opinion the machine was in good flying order. This was an enormous concession entirely in the right hon. gentleman's favour.

Col. Seely: Why?

The Chairman (Mr. Whitley) suggested that it might be as well to allow the hon. member to make his full statement and answer it afterwards.

Col. Seely: But it was a very remarkable statement for the hon. gentleman to make, and, I think, very unfair to the officers concerned, who are not here to answer for themselves.

The Chairman: The more important the statement the less suitable is it to deal with it by interjection.

Mr. Sandys failed to see the point of Col. Seely's remark. He made not the slightest suggestion against any of the officers, nor was he in the least speaking in any party spirit. If the right hon. gentleman's statements were in any degree accurate they ought to have found, on the application of the test they applied, not merely 80 machines, but, approximately at any rate, 120 machines, which Col. Seely alluded to a few days previously as being in first-class order. "Mr. Joynson-Hicks and myself," went on Mr. Sandys, "each took a separate list of all the machines we saw. It gave the Army number of the machine, the type and horse power of the engine, the date of delivery, and the remarks of the officer in the habit of flying the machine. After the tour was completed we compared notes, and where there was any difference of opinion as to whether a machine should be regarded as ready to fly or not we gave the right hon. gentleman the benefit of the doubt. With

matter which I can only leave to the judgment of those who have read this statement.

The members of the Flying Corps are splendid—eager, anxious, brave—but for lack of machines and proper support, I can only say, in the words of one of the contractors who supply a considerable number of machines to the corps: "As an effective fighting force at this moment the Royal Army Flying Corps is non-existent."

regard to monoplanes, we saw 24 of these, some in good order, others in very bad repair, and others dismantled altogether. These were ruled out, in view of the fact that they had not been flown since the accidents which occurred in the early part of September, 1912, or nine months previous to our visit. This applied to all the monoplanes except two Blériots, Army numbers 219 and 221, which we did not see because they were in transit between Farnborough and Larkhill; but as we were especially told they were the only monoplanes that were being flown we of course included them in our list. As I understand the right hon. gentleman's view with regard to these monoplanes is that although they are regarded as dangerous for use in time of peace they nevertheless ought to be counted as efficient for war purposes. Can this be regarded as a sound argument? Supposing that on peace manoeuvres a certain number of guns of a particular type exploded when they were fired with blank ammunition, and caused loss of life. Supposing, as a result of this accident a Committee of Experts decided that none of the guns of this type were to be fired until they had been altered and made safe; would the right hon. gentleman really say that batteries armed with this type of gun, which they were not allowed to fire in time of peace, ought to be regarded as effective artillery units in time of war? Of course, it would be ridiculous; but this is exactly what he asks us to do with regard to the monoplanes. In view of the fact that these machines had not been used for nine months, and in face of the result of the finding of the Committee which the right hon. gentleman himself appointed; and also in view of the fact that it was impossible to get accurate information about these machines, as many had never been flown at all by the officers, and there were no officers who could be regarded as being in the habit of flying them, we came to the conclusion that these machines could not be considered as satisfying the requirements of the test. On June 11th we paid our first visit to the Central Flying School. We were very much impressed with the progress which had been made in the construction of the buildings, and with the enthusiasm which evidently animates all the officers connected with the School, whether undergoing training or members of the instructional staff. In fact, the Flying School was the most satisfactory part of our tour. We were, at the School, shown 18 machines which the officers said were in flying order. We then proceeded to Larkhill to inspect No. 3 Squadron, Royal Flying Corps. This squadron was, we found, regrettably deficient in machines. A squadron, it must be remembered, consists of three flights of four aeroplanes each, with two in reserve for each flight, that is to say, a total of 18 machines per squadron. No. 3 Squadron was eight machines deficient. There were only ten machines in all, and two of them were under repair; and of the eight machines which we were informed were ready to fly, the commanding officer stated that so far as two were concerned, they could not be regarded as war machines. The state of this squadron appeared to be most unsatisfactory, and extremely disappointing after the right hon. gentleman's statement that these squadrons were kept always on a war footing. On June 13th we proceeded to Farnborough. But in the meantime, my hon. friend Mr. Joynson-Hicks had received a detailed official return for June 7th. This gave a total of 120 machines, which Col. Seely had alluded to two days previously in the House, and described as machines in first-class order. We found, however, that these 120 included, according to the official list, no less than 42 machines which were described as under repair, under construction, or totally damaged. And the machines 'ready to fly,' upon which this controversy turned, were enumerated in the list under this very description. We found that there were 50 machines described as 'ready to fly,' exclusive of three experimental machines but including seven machines which were under test. Therefore, the document with which we were supplied by the courtesy of General Henderson really settles the whole controversy, and absolutely cuts the ground from under the right hon. gentleman's feet. No. 4 Squadron is stationed at Farnborough, and the organisation of this squadron did not appear to be so advanced as that of No. 3. There was no clear sub-division into flights, and the squadron machines and depot machines were mixed up in such a way that it was impossible to distinguish one from the other. However, there were here 12 machines which were stated to be in flying order. We then saw in a separate shed, and apparently in charge of a civilian, seven machines which were not yet handed over to the Central Flying

School, but which we were told were in flying order. On the ground we saw three machines actually in flight. As these were described as experimental machines flown by civilians, we did not feel justified in including them in the list; but taking all the machines together, including the two Blériot monoplanes, and including four machines in Montrose, this gave a total of 44 machines ready to fly. If the machines under test were added, it gave a total of 51 machines, which is the outside figure of machines ready to fly between June 7th and 13th. We were told that this was not an abnormally small proportion of the total, and that given the same number of machines you would never be likely to have more than these in efficient flying order at any one time. What, therefore, would be our position if war broke out? The Staff at the School desired particularly to emphasise the fact that in the event of war the Flying School must go on as before in order to keep the supply of pilots to meet what must unfortunately be the necessarily heavy casualties of warfare. For the school 30 machines would be the absolute minimum that would be necessary. Twenty of these 30 at least must be in good flying order. Therefore this would give us, under existing conditions, only 24 machines actually available for the War Squadrons; or, if you add the 7 machines under test 31 in all, or less than two squadrons. This is a dangerous and unsatisfactory state of affairs. It is perfectly evident that the 80 machines to which Col. Seely alluded on March 24th, and which he described as 'ready to fly' and able to fly at 50 miles per hour, cannot be found at the present time. How can the right hon. gentleman possibly reconcile his statement on June 5th: "We have got 120 machines—I take only those in first-class order"—with the fact that in the official returns for June 7th supplied by his own Department the figure of 120 is only reached by the inclusion of 42 machines which were under repair, under reconstruction, or wrecked, and awaiting authority to strike off? How can a flying machine which is under repair, reconstruction, or total damage, and therefore incapable of flying at all, be described as being in first-class order? Such a statement as that is calculated to mislead the House and the country. This is not a small matter. We cannot play with this question of aviation when we remember that the success or failure of military operations in the future must largely depend upon the efficiency of the Royal Flying Corps and the proper provision of material and machines. And unless the right hon. gentleman can make some satisfactory explanation of the wide discrepancies which exist between what he has told the House on various occasions and the facts as they were disclosed to us in the course of this inquiry, I am afraid it will be difficult for me, at any rate, to receive in future any statements which the Secretary of State for War may make on the subject of the great Service which he controls with that complete confidence which should be accorded to a Minister of the Crown.

Col. Seely (Secretary for War): With regard to the number of aeroplanes I said in the course of the debate that it seemed to me that the whole controversy was uninteresting, and I think so still. It is uninteresting for this reason. The interest would lie if the hon. gentleman (Mr. Sandys) could suggest that I had endeavoured to conceal the true position from the House. The hon. member himself has told us that he had access to the official documents, some of which he has misread in the most comical fashion. My sole object in inviting him to see for himself was to dispel the illusion that we had got no aeroplanes to speak of. My instructions to General Henderson were that during the visit everything was to go on just the same, and that every facility to ascertain the facts should be given. All this was done, and now the hon. gentleman tries to make the House believe that I have been endeavouring to deceive it.

Let me explain how he has fallen into the error. I have disclosed the full number of the aeroplanes that we have, and I will continue to do so as long as the House insists on it, but I suggest that it would be wise to cease making this information public. No other nation does it. Since the Royal Flying Corps was started, a little over a year ago, we have bought and had delivered 130 first-rate aeroplanes, the best that could be obtained. Of those a small number have been damaged past repair, many have been reconstructed from time to time. In the case of one kind of engine it has to be dismantled every thirty hours, and in the case of another about every forty hours. Moreover, in connection with exceptional strain on the machines tests have to be made in connection with wires and struts and stays. The hon. member says he did not see the machines flying. Does he suggest that they do not fly? I can assure the House that in all weathers our flying men are flying over the country every day. The Central Flying School on Salisbury Plain has a record of 100,600 miles flown, apart from short flights, without a single serious accident. That is a most remarkable record. The military wing has a record of 135,000 miles flown. Accidents there have been, but only a small proportion considering the dangers incurred. All that will show the immense amount of work that is being done. But as this is done constantly the

aeroplanes have constantly to be repaired and overhauled, and at any given moment out of all the efficient aeroplanes at least 40 per cent. ought to be under supervision or repair. Had I given orders so that the hon. gentleman would have gone round on a day when there had been no flying for a week he would have come to this House with a humble and ample apology because he would have seen all the machines in flying order—but as it was everything had been going on just the same.

Mr. Sandys: It was quite obvious that everything had not been going on just the same.

Col. Seely: It may have been obvious to the hon. gentleman, but he is quite wrong. It is not one man's word against another. I have access to more official knowledge than he has. The whole matter, however, is a barren controversy. It became so from the moment when the hon. member for Brentford (Mr. Joynson-Hicks), whose absence to-day I greatly regret, said he had never suggested that he did not believe me personally. He had always assumed that I was acting on information wrongly supplied by my officers. The same thing has come out this evening in the speech of the hon. gentleman opposite, and I could not refrain from at once protesting against his statement. He said it was an advantage to me that he had not got his own experts, and therefore he accepted the statements of my officers.

Mr. Sandys: I said nothing of the kind.

Col. Seely: Yes, the hon. gentleman did, and he doubts the word of our officers.

Mr. Sandys: I protest very strongly against this misrepresentation. I complained that we were deprived of the assistance of experts, and as we had not got experts of our own we decided not to take into consideration what we at first wanted to weigh, as to whether the machines could fly 50 miles an hour, and ascend 3,000 feet, and I said that by making that concession and minimising our requirements all that was to the advantage of the right hon. gentleman.

Col. Seely: I wrote down the hon. gentleman's words at the moment. He accepted the officers' statements instead of his own experts, and that gave me an advantage. Yes, and it is of a piece with his other statement that he did not doubt my word, but I was acting on information wrongly supplied by my officers. These officers deeply resent these imputations. I speak of what I know. I do not mind what is said against myself, but I strongly protest against its being assumed, as has been assumed, that officers are giving me wrong information, especially those men of all others who are running such great risks and are doing such admirable service for the country. In future let honourable members attack me. It is a complete delusion to assume that the Government have not got the machines because they have not the money. At the present moment there are on order 90 aeroplanes, the delivery of a large proportion of which is long overdue, and the same is the case in every other country. The science of aviation is so new that there are not sufficient men to construct these delicate machines in anything like the numbers wanted, but I am glad to say that that difficulty is drawing to an end in this country, and I foresee that in a very short time we shall be able to get not all the aeroplanes we want, or that we have the money for, but much more rapidly than they can be got now, and of the very best type. I am also glad to say that I have been able to make arrangements with the Chancellor of the Exchequer considerably to accelerate the Government's aeronautical programme. I have been able to arrange also for a greatly increased supply of spare parts and for the completion of the squadrons at an earlier date than that originally intended. All this will be carried out by the new Aviation Department under General Henderson, who was one of the first to pass the test as a certified pilot, and whose services we are fortunate in having obtained. There are now 191 officers and men in the Royal Flying Corps who are certified flyers, and this time last year there were only about 20. Of the 191 at this moment, 82 have obtained the highest military certificate, and more are under training. It is anticipated that a further 25 will have passed in the course of the next fortnight. These trainings of officers will go on. We know now that we are a nation that can produce flying men of the highest character and ability. We have got a type of man who knows how to do desperate things without becoming a desperate character. That is a problem which other nations have to face and which all nations have not been able to solve. It is remarkable that our flying officers have shown exceptional attainments in other directions, both intellectual and otherwise. I can promise that no effort will be spared to continue and accelerate the War Office aviation programme, and if I should be fortunate enough to present the Estimates next year I hope to be able to give the House a satisfactory account of the progress of this new service. I wish to utter a word of warning as to the mistakes that may be made in making comparisons with foreign Powers on this subject. It has been stated by a writer in the *Times* that

France only a year ago had less than 100 machines fit to take the field. That showed that one must accept with caution statements as to the number of aeroplanes possessed by foreign Powers.

Mr. Bonar Law (U., Bootle): I have never heard, I am bound to say, a case of more deliberate misrepresentation than what the right hon. gentleman (Col. Seely) said about my hon. friend (Mr. Sandys).

Col. Seely: I rise to point of order. Is the right hon. gentleman entitled to say that I deliberately misrepresented the hon. member?

The Chairman: I think the right hon. gentleman is entitled to say that there was misrepresentation, but I do not think we should accuse one another of the intention to misrepresent.

Mr. Bonar Law: I was hurried in what I said, or I should have put it in another form. The point is, that the right hon. gentleman did unintentionally misrepresent my hon. friend. He accused my hon. friend of saying that he doubted the word of the officers. No one who heard my hon. friend's speech could for a moment accept that as a correct statement. What my hon. friend said was that instead of having the expert advice, which would have enabled them to decide whether the machines fulfilled the test which had

been laid down by the hon. member for Brentford (Mr. Joynson-Hicks), they accepted the statement of the officers that the machines were ready to fly, and that that was a great concession to the right hon. gentleman. So it was. But the right hon. gentleman proceeded to explain that it was a concession for this reason, that he waived the other tests which could not be decided in that way. When the right hon. gentleman claims that all this was done on his own initiative, he forgets what has happened. My hon. friend made a challenge that there were not 120 aeroplanes, but only 80, which could efficiently fly. What was the result? There were not 80, but 51 on the most liberal computation. Further, the right hon. gentleman said they had 120 machines in first-class working order. From their own official statement this number included some that were described as damaged and awaiting instructions as to disposal, and others regarded as wrecked and awaiting authority to "knock off." All this proves that the right hon. gentleman was rash in the extreme in the statement he made to the House, and if we cannot accept a deliberate statement made in a case of that kind, how can we be expected to accept his assurances on other matters in regard to which it was impossible to have such a test?

BRITISH NOTES

Death of Col. Cody.

It is with the deepest regret that we have to record that the news reaches us as we go to press that Col. Cody, while flying at Aldershot on Thursday morning with a passenger named Evans, met with an accident and was killed, together with his passenger.

Col. Seely Visits the R.A.F., &c.

ON Saturday Col. Seely paid a visit to Farnborough personally to see for himself just how many aeroplanes the Royal Flying Corps has there. A thorough inspection of the Royal Aircraft Factory was made under the guidance of the Superintendent, Mr. Mervyn O'Gorman, and great interest was taken in the three latest machines, the R.E. biplane, an armoured machine, and the waterplane tested on Frensham Pond by Mr. Ronald Kemp. This pilot took up Mr. Nicholson, Col. Seely's private secretary, for a trip in the R.E. machine. Col. Seely also visited the airship sheds, and spent some time examining the "Parseval" and "Beta."

The Government's Waterplane.

ALTHOUGH official details are not available, it is understood that the trials conducted on the Frensham Great Pond by Mr. Ronald Kemp with the experimental waterplane built in the Aircraft Factory have proved very successful.

Improvements at Walney Island.

IN view of the proposal of the Admiralty, in conjunction with Messrs. Vickers Ltd., to make Walney Island an important centre for the testing of waterplanes and the construction of airships, the Barrow-in-Furness Town Council has decided to spend some £3,000 on improvements to the island. It is stated that the airship factory, when completed, will employ 1,500 men.

Salmet Crosses the Channel—

ON the new Blériot two-seater, on which he will tour England by arrangement with the *Daily Mail* this summer, M. Salmet flew from Buc to Hendon on the 31st ult. Getting away from Buc at 2.40 p.m., Salmet, after the first few kilometres, had to steer

OF THE WEEK.

entirely by compass as his map was broken. He, however, made Hardelet in good time, and flying against a strong wind crossed the Channel to Folkestone, landing on Shorncliffe Camp at half-past five. After securing petrol, &c., he restarted at 7 o'clock and reached Hendon at 8.15, after making a brief stop about four miles from the aerodrome in order to make certain of his whereabouts.

—And Flies to Brighton.

DURING the week-end Salmet gave some exhibition flights at Brighton whither he had flown on the 1st inst. Leaving Hendon at 12.55 p.m., he made a fast trip to Brighton and, after steering a wide circuit of the town, landed at Preston Park at 2 o'clock.

Flying at Brighton.

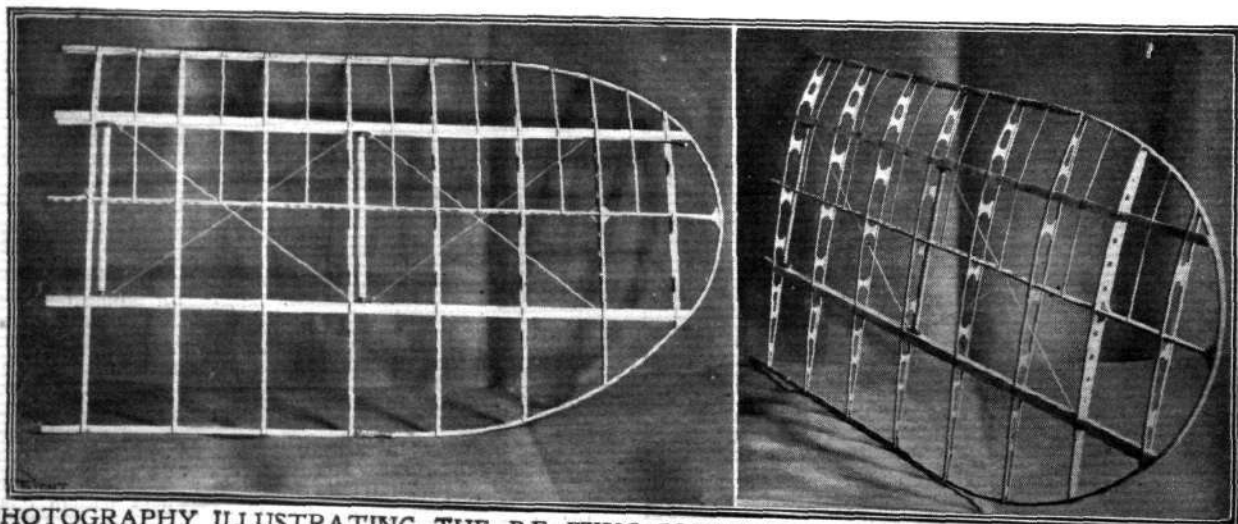
If Brightonians have not seen enough flying during the August holiday, then they want a deal of satisfying.

Preston Park and Messrs. Volk's hangar have been the centres of attraction, M. Salmet on the *Daily Mail* Blériot being at the first-named place and Mr. Claude Grahame-White at the other. Mr. White's machine was a Morane-Saulnier waterplane, and very efficient it was too. Thursday, Friday and Saturday saw both pilots flying over Brighton and district, a strong wind persisting every day. Mr. Grahame-White left for Cowes at 6 o'clock on Saturday evening, but M. Salmet stayed over till Tuesday, giving exhibitions each day except Sunday. Preston Park is not an ideal spot for landing, being situated right in the valley and surrounded by trees.

Certainly the *Daily Mail* pilot deserves congratulations on the way in which he overcame the difficulties of this awkward landing-place.

In Memoriam.

A CHEQUE for £4 10s., being the first instalment of interest accruing to the fund raised in memory of the late D. G. Gilmour, who was killed at Richmond while flying from Brooklands on February 17th, 1912, has been sent to the Weybridge Cottage Hospital by the trustees of the Gilmour Memorial Fund.



PHOTOGRAPHY ILLUSTRATING THE B.E. WING CONSTRUCTION.—These views were made from a scale model.

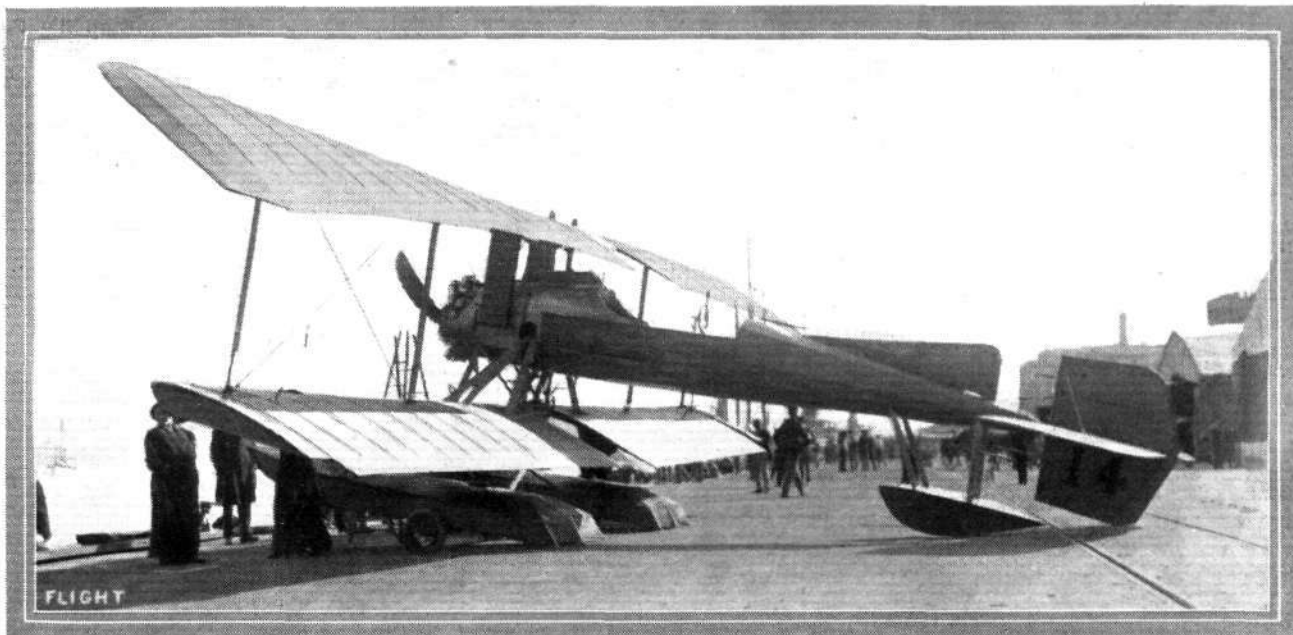
FOREIGN AVIATION NEWS.

World's Record with Seven Passengers.

RUBIN ON his huge aeroplane, Sikorsky, at St. Petersburg, on the 2nd inst., made a new world's record by carrying seven passengers for 1 hr. 54 mins., covering in that time 85 versts or 56 miles. The previous record was held in Germany by Faller, who carried seven passengers for 21 mins.

Cross-Country Record with Three Passengers.

STARTING from the Taliedo aerodrome, near Milan, on the 1st inst., Cevaseo, on a monoplane with three passengers, flew to Venice. His time for the trip of 260 kiloms. was 2 hrs. 45 mins., a world's record for a cross-country voyage with three passengers.



A Breguet waterplane of the same type that Bregi has been flying at Brighton daily. This machine is fitted with a 130 h.p. Canton-Unne motor and with compressed air self-starting arrangement. Bregi has been taking up two and three passengers at a time.

Records at Westphalian Meeting.

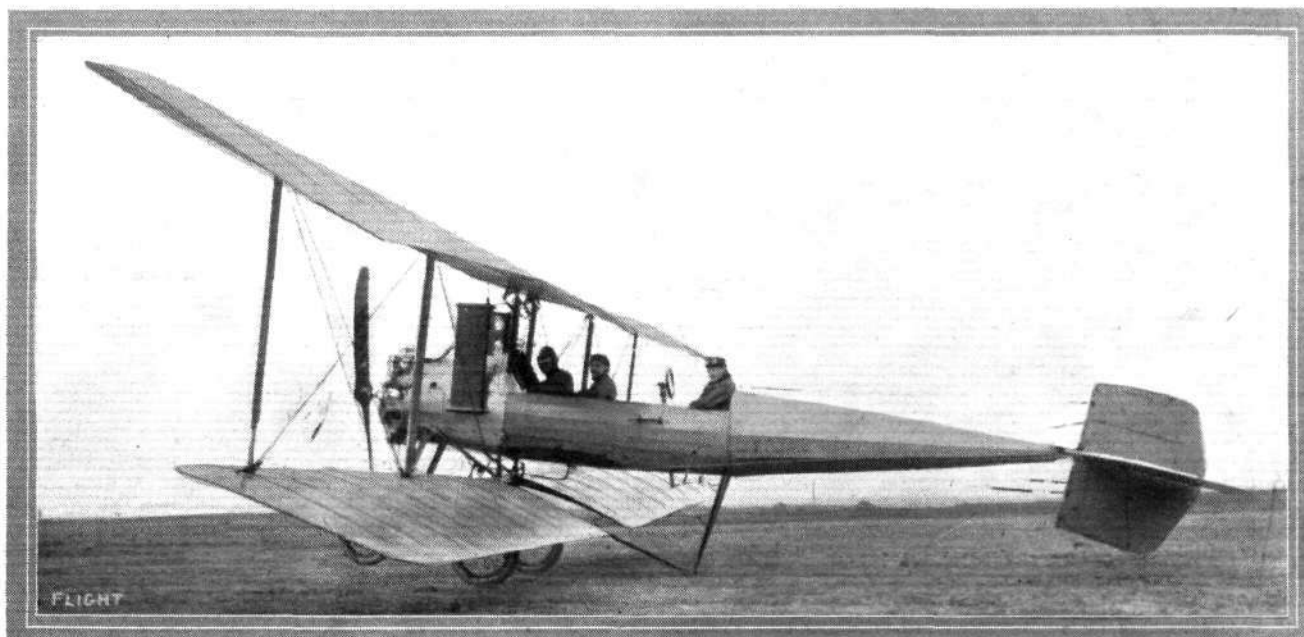
ONE national record was produced by the meeting organised by the West Germany Aerial Society at Cologne last week—Linnekogel, on Friday, getting his monoplane up to a height of 4,250 metres; the previous German record was 3,260 metres. Each day, with the exception of the 31st, which was a rest day, altitude, duration and speed contests were held, and the competition was very keen. In the duration competition the best performance was that of Stiplosbeck, 2 hrs. 21 mins., while the second, Weyl, was only 1 min. short, and Linnekogel and Stoeffler tied for third place with 2 hrs. 16 mins.

President Poincaré accords his Patronage.

ON the 29th ult. President Poincaré received a deputation from the Aero Club of France and announced that he would be pleased to accord his patronage to the Gordon-Bennett aviation race at Rheims on Sept. 29th and the Gordon-Bennett balloon race at Paris on Oct. 12th. He also promised to be present at the latter event if he returns from Spain in time.

A Garros-Brindejonc Match.

ON Sunday afternoon Brindejonc des Moulinais and Garros, both on Morane-Saulniers with 80 h.p. Gnome motors, were flying at Marseilles. In the first race of 10 kiloms. Brindejonc's time was



One of the latest Breguet biplanes which differs from its predecessors in the central steel tube being replaced by a framework of steel tubes tapering to the tail. It is also fitted with a brake operated by a lever under the pilot's seat. The engine is a 110 h.p. 9 cyl. Canton-Unne.

7 mins. 28½ secs., while Garros took 7 mins. 40½ secs. The pilots then exchanged their machines, but Brindejone again did the best time—7 mins. 28 secs.—while Garros' time was 7 mins. 33½ secs. The two pilots then carried out a series of exhibition flights.

A Nieuport Superior Pilot.

At Villacoublay, on the 25th ult., Roume, a Comité Nationale pupil at the Nieuport School, completed his tests for a superior *brevet* by a splendid flight to Orleans and Chartres and back.

Honours for Famous Aviators.

In the latest list of nominations for the Legion of Honour are the names of Brindejone des Moulinais, Leon Morane and Saulnier.

A Blériot Superior Pilot.

For his third test for a military *brevet* Revel Tissot, a Comité Nationale pupil at the Blériot school at Buc, on the 1st inst., flew from Buc to Pont Leroy, flying the 150 kiloms. at a height of 1,500 metres.

Testing the Dorand Biplane.

On the biplane of Commandant Dorand, which has a 10 cyl. 100 h.p. Anzani motor, Labouchere, on the 29th ult., made a trip from Villacoublay to Evreux and back. The next day it was flown to Tours and back.

Issy to Mourmelon on a Voisin.

On a Voisin biplane, with Gnome motor, intended for the French Army, Rugere on the 30th ult. flew over from Issy to Mourmelon in two hours, keeping at a height of between 1,800 and 2,000 metres.

Paulhan to Retire.

From Paris it is announced that Paulhan has decided to give up aviation, and devote all his time to a horticultural establishment on the Riviera which he has purchased.

Guillaux's 50th Trip over Paris.

GUILLAUX'S Clement-Bayard monoplane is by now a familiar sight to Parisians, and on the 30th ult. the aviator made his 50th trip over the French capital.

A New M. Farman.

At Buc, last week, Maurice Farman was testing his latest biplane, in which the front elevator has been dispensed with, while the machine also lacks the long familiar skids which have always been a characteristic feature of M. Farman practice.

British Officers at Buc.

LAST week Lieuts. Wadham and de la Ferte, two of the officer-pilots of No. 3 Squadron of the Royal Flying Corps, commenced a period of monoplane instruction at the Blériot School at Buc. Capt. Fox was also making some splendid flights on a Blériot XI.

To Investigate French Accidents.

At the suggestion of M. Paul Rosseau, the Aero Club of France is considering the formation of an Accidents Investigation Committee on similar lines to the one which is doing such good work in Great Britain.

500 Kiloms. on a Nieuport.

BONNIER on a new model 80 h.p. Nieuport monoplane left Villacoublay on the 29th ult. and flew to Brienne-le-Chateau and back. Bonnier was accompanied on the trip by his mechanic.

The Deperdussin Affair.

IN regard to the sensational arrest of M. Armand Deperdussin, it is announced from France that this will not interfere with the carrying on of the Deperdussin aeroplane business, which is stated to be working on a sound profit-making basis. It is good news to learn this, as it would be a great calamity should this large aeroplane constructing house be wiped out.

Testing a Rhone Motor.

By way of testing a new Rhone motor Gilbert had the engine put into his Farman biplane, and made a non-stop flight of over 4 hours on the 29th inst. Starting from Etampes, Gilbert flew by way of Orleans and Beaugency to Blois and returned *via* Ouzouere and Patay.

Curious Fatality at Johannisthal.

A MONOPLANE, piloted by a pupil named Brooks, while flying at Johannisthal on Sunday came in collision with a wind-gauge, and on the machine falling to the ground it caught fire. The pilot was so severely burnt that he died shortly after arriving at the hospital.

Berlin to Vienna with a Passenger.

ACCOMPANIED by a passenger, Schuler, on the 31st ult., started from Johannisthal, at 5 p.m., to fly to Budapest. After being in the air for two hours he landed at Chemnitz, from where he re-started on the following morning at 4.51. His next stop was about 70 kiloms. from Vienna, he going on to the Austrian capital during the afternoon, where he decided not to continue to Budapest.

Cross-country Flying in Belgium.

ON July 31st Lieut. Wahis left Spa with the intention of making a non-stop flight to Tournai. After covering 170 kiloms. in 1 hr. 35 mins., he was forced to land at Lierde for adjustments, and went on to Tournai the next morning. Capt. Dechamps has made several long flights at the Brassehaet aerodrome lately, and on July 31st was flying with a passenger over the surrounding country for an hour and a half.

Turin to Rome on a Blériot.

ON the 2nd inst. Lieut. Suglia, on a Blériot-Gnome two-seater, arrived at the Centocelle aerodrome at Rome, having flown the 700 kiloms. from Turin in seven hours, including a stop of 39 mins. at Pisa. On arrival at Rome he was flying at a height of 300 metres.

Amundsen to Fly.

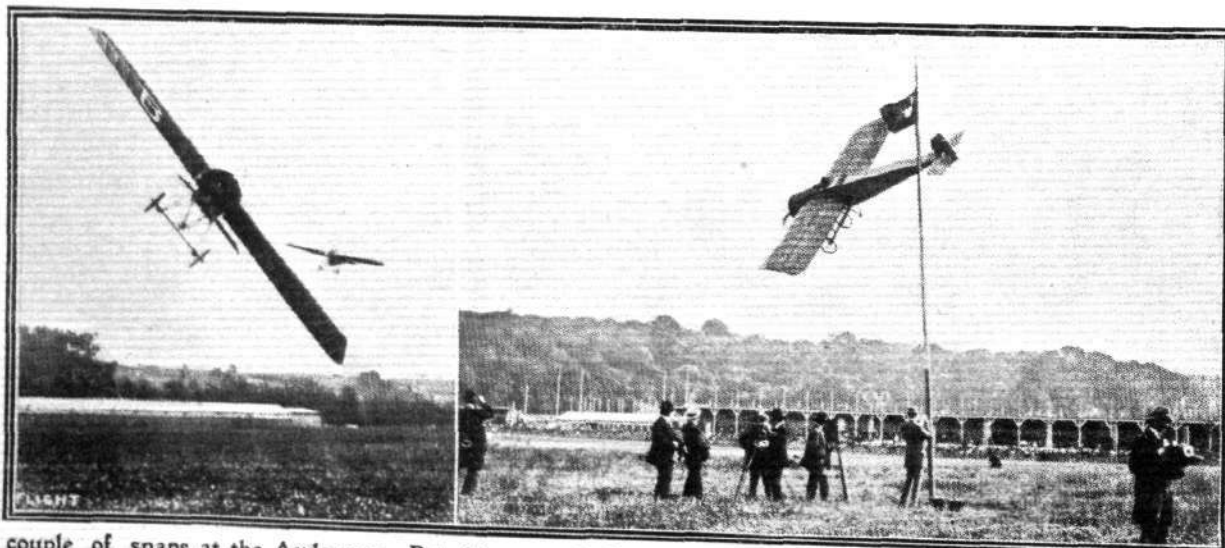
It is report that Capt. Amundsen is taking lessons in flying at a school in Norway, and that the equipment of his next Arctic expedition will include two waterplanes.

Chevillard at Copenhagen.

DURING last week, Chevillard made a series of exhibition flights at Copenhagen on his H. Farman biplane. These exhibitions have of course included the thrilling chute de côte, and on Sunday at the end of one trip he came down with engine stopped from 2,700 metres by a fine spiral. Large crowds gathered each day at the aerodrome to witness the flying.

Another Fatality at St. Petersburg.

AT the military aerodrome at Gatchina on the 29th ult., Lieut. Mathay received fatal injuries when his machine fell from a height of between 200 and 300 metres.



A couple of snaps at the Audemars, Brindejone and Guillaux match at Juvisy, showing some banking by Brindejone des Moulinais.

CAVELIER'S RECORD FOR THE MICHELIN CUP.

It is a wonderful commentary upon the progress which has been made in aviation that practically no notice has been taken outside France of the remarkable performance which was made last week by Cavelier in flying for the International Michelin Cup. On a Deperdussin monoplane with 60 h.p. Gnome motor and Chauvière Intégrale propeller, Cavelier, as mentioned in our last issue, started from Issy on the 29th ult. and covered eight rounds of the Etampes-Gidy course, a record for the day of 901.12 kiloms. The following day eight more rounds were covered, then seven more rounds on the 31st ult., another seven circuits on Aug. 1st, eight on Saturday, a further eight on Sunday, and seven on Monday, by which time his record for seven days was 5,969.92 kiloms. On Tuesday were added another seven rounds, and, after making half-a-dozen more circuits on Wednesday, Cavelier had piled up a record of 7,434.24 kiloms., which, it would appear, is hardly likely to be improved upon for some considerable time.

FOR THE POMMERY CUP.

Gilbert's Flight of 1,300 kiloms.

ALTHOUGH he did not quite equal Brindejone's record flight from Paris to Warsaw (1,400 kiloms.), Gilbert on Saturday made a splendid attempt. Starting from Villacoublay at 4.44 a.m. on his Morane-Saulnier monoplane with 60 h.p. Rhone motor and Chauvière Intégrale propeller, he attained a great height, and went off in a southerly direction with the intention of making a non-stop journey to Vittoria, 800 kiloms. away. The machine was carrying 200 litres of fuel and 30 litres of oil, and on arrival at the Garnier flying ground at Vittoria there were about 70 litres of petrol left and 5 litres of oil. From Paris to Bordeaux the pilot was favoured with excellent conditions, but from Bordeaux to Tolosa he had to fight his way against the wind. The Pyrenees were traversed at a height of 2,000 metres, and at 11.45 a.m. the landing effected safely at Vittoria. A stop of 1½ hours was sufficient for the machine to be replenished and the pilot to refresh himself, and then the journey was resumed. About 3 p.m. the pilot was seen at Miranda, steering in the direction of Madrid, and when near Burgos he was surprised by a gale and forced to land. After a wait of two hours he was able to continue and reached the Spanish-Portuguese frontier at Caceres, a distance of 500 kiloms from Vittoria and a total distance of 1,300 kiloms from Paris.

Guillaux also has a Splendid Failure.

ON Sunday morning, Guillaux on his Clement-Bayard monoplane, which has a 70 h.p. Clerget motor and Chauvière Intégrale propeller, started from Issy on his long-projected trip to Casablanca. Like Gilbert he intended to make a non-stop flight to Vittoria, but had to make a stop of 25 mins. at Bordeaux to secure some more fuel, and then completed his 800 kilom. journey to Vittoria, where he arrived at the Garnier flying ground at 12.30 p.m. After lunch he restarted for the South of Spain at 1.15 p.m., but eventually he landed on the Portuguese frontier at Bermillo-del-Sayago, about 20 kiloms. from anywhere. While flying, his map had become deranged, and, in landing to adjust this, the chassis of the machine was damaged in such a way that Guillaux could not repair it, and to his chagrin he had to end his attempt, splendid as it had been, at 1,160 kiloms.

Wind Baulks Janoir Again.

ON his 80 h.p. Gnome Deperdussin, Janoir started from Etampes, on the 30th ult., on another attempt for the Pommery Cup. He contemplated flying into Spain but in the neighbourhood of Blois he found the adverse wind and rain so trying that he decided to give up.

AIRSHIP NEWS.

Mishap with "Z III."

AFTER making a voyage of three hours' duration on Sunday, one of the motors of "Z III" began to give trouble, and it was decided to return the vessel to her shed at Frascaty. A sudden gust of wind overpowered the soldiers who were taking the airship into the shed, with the result that one was blown against the door, and one of the balloonets was pierced.

Long Voyage by Italian Airship.

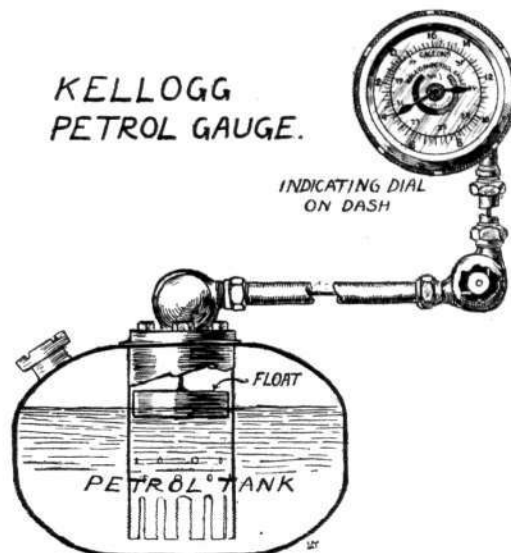
ON the 30th ult., the Italian military dirigible "P V," stationed at Verona, made a voyage of 800 kiloms.

A New Clement-Bayard Airship.

ON the 31st ult., some tests were made at La Motte Breuil with the latest Clement-Bayard airship, Clement-Bayard VI. Apart from the two propellers which drive the dirigible, a slightly smaller propeller is mounted in a horizontal plane so that it can be utilized for assisting either ascent or descent. In the course of two tests of 15 mins. and half-an-hour respectively, the arrangement worked splendidly. There were six people on board, including M. Sabatier, M. Baudry, and four mechanics.

AN IMPORTANT FITTING FOR AVIATORS.

How important it is that aviators should be able to tell quickly how much petrol there is in the fuel tank of their machines, and yet there are very few devices on the market that achieve this end. Of course, with the many variations in the shape and capacity of petrol tanks it is not by any means easy to secure a fitting which shall be suitable for use with any tank, but among the advantages which are claimed for the Kellogg petrol gauge, which we illustrate, is that it needs but little alteration should the tank vary from the particular sizes for which the gauge is designed. In fact all that is necessary is to take a blank dial and calibrate it by pouring known quantities of fuel into the tank. A number of dials calibrated for standard



sizes of tanks are kept in stock. We understand that the Kellogg gauge is equally adaptable to pressure or gravity tanks. Referring to the sketch, it will be seen that the mechanism consists of a float, contained within a cylindrical chamber in the fuel tank, which moves up and down relatively with the fuel level, and by means of a silk cord transmits this movement to a pointer moving over the dial, so that the quantity of fuel in the tank is indicated. The silk cord is carried through tubing, and wherever there is an angle it runs over pulleys. The dial is marked off in gallons (black figures) and fractions of gallons (red figures). A small hand indicates that the latter figures must be observed when the former is over a red segment marked on the left of the dial, and when over the black segment on the right, the large hand and the black figures give the reading.

For use on aeroplanes the fitting is made in aluminium, thus reducing the weight to a minimum. The price of this gauge, including fitting to the aeroplane or car, is £8, and it is supplied by the Kellogg Manufacturing Co., of 265, Strand, London, W.C.



BOWDEN WIRE FOR AEROPLANE BRACING.

THERE is a strong tendency to abandon the use of solid drawn steel wire in favour of stranded cable in aeroplane bracing, and we have before us several samples of the stranded wire that Messrs. Bowden use in their well-known brake mechanism, which might be very useful to those who are enquiring for a reliable make. It was, of course, essential for Messrs. Bowden to investigate the qualities of stranded cable very exhaustively before committing themselves to any particular sort, for the whole reputation of their business depended on its reliability.

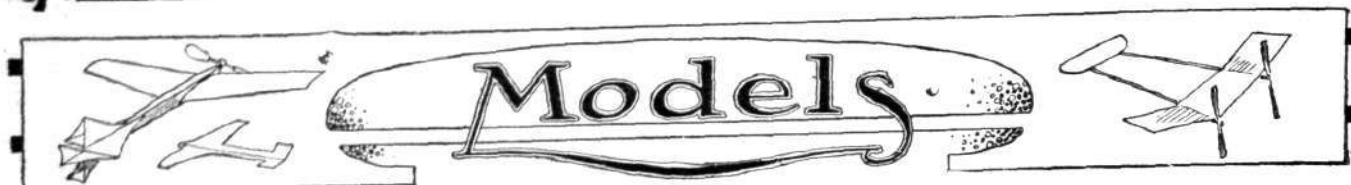
The samples that Messrs. Bowden have sent us are as follows:—

No.	Breaking Load.	Price per ft.	No.	Breaking Load.	Price per ft.
51	270 lbs.	3d.	3	1,505 lbs.	4d.
52	320 "	3d.	4	2,220 "	4d.
1	660 "	3d.	5	3,460 "	4d.
2	955 "	1d.	6	3,660 "	4d.



Aviation and Natural History.

A SPECIAL collection is now being arranged at the Natural History Museum, South Kensington, with a view to illustrating different modifications in the structure of animals with regard to flight. This should prove of very great interest to all who are studying the problems of aviation.



Edited by V. E. JOHNSON, M.A.

Why Abolish the Single-Propeller Type Model?

By C. C. HORNER.

"FOR some time now I have noticed the slow but sure way in which this type has been decreasing, and its place supplied with a semi-racing type. It thus becomes an important matter so far as aeromodelists are concerned to find out whether to encourage this type or drop it altogether.

"Let us first consider the disadvantages likely to follow from neglecting the model fitted with only one propeller. They appear to be three in number—viz.: (A) Owing to its slow speed it makes but a poor show in long-distance competitions. (B) Its size as a model is more limited. [Why?] (C) It is more difficult to steer.

"With respect to the advantages which would, in all probability, follow from its use, we have: (A) The necessity of increased supporting surfaces, and also in its general lines its greater resemblance to full-sized machines, and the greater skill necessary to overcome the torque of the motor and propeller reaction.

"(B) Its slower speed consequent on its larger surface renders it far easier to follow and observe whilst flying, a factor of great importance whilst experimenting.

"(C) It has also a better gliding angle and its appearance in flight is of a more graceful character than its twin propeller rival.

"(D) Its stability is equally as good as the other type.

"The above items, in the writer's opinion, appear to give a general idea of the subject from the practical side; and it is at once seen that the stumbling block lies in the general regulations of present-day competitions and their organisers.

"Why not have separate competitions for this type of model? No one expects a 10 oz. r.o.g. model to compete with a light, hand-launched machine; yet no steps have been taken to give this type an equal chance.

"The consequence is, that any model of this type entered in a competition is made to appear inefficient, and thus takes a low place in the list, and the owners thereof are disappointed in consequence; whilst most likely the winning machine is a twin-propeller model, capable of covering a greater distance or making a longer duration, but less practical in many respects. Finally, is model aeroplaning to become a sport only or a scientific pursuit? Personally I hope the latter. If so, matters certainly require a little adjustment now that so rapid an advance has been made. But it is by no means always the best policy to keep pushing along one line only and neglecting others. The foregoing applies only to the canard type of models, biplanes as well as monoplane.

"I suggest that the K. and M.A.A. might take steps towards having separate records for this type of model, and thus give this type an equal chance, since it certainly has quite sufficient good qualities to be worthy of more consideration in the near future."

[Commenting on the foregoing remarks, it would not be a very difficult matter to put the case for the single propeller type of model in considerably stronger terms than Mr. Horner has done.

But, every competent aeromodelist knows its value; our correspondent need not have the least fear of its being abolished, even from popular competitions. Several of the K. and M.A.A. competitions for this season are for machines carrying only one propeller. Every one experimenting with power-driven models, so far as the writer is aware, uses one propeller only; they are therefore by no means being neglected. We quite agree with our correspondent's views with respect to there being separate official records for this type—for both r.o.g. machines and hydro-aeroplanes, at any rate—and will bring the matter before the K. and M.A.A.

For spectacular effect, the twin-propeller type has its value as a factor in increasing the number of those already interested in aeronautical matters, and also from time to time rendering assistance in the solving of some new problem where it is essential that the model shall actually fly. For instance, this particular type was of the greatest possible use in the case of model hydro-aeroplanes which have been developed so rapidly and so successfully. It is certainly not too much to say that this would not have been the case had we not previously developed the twin-propeller type of model. But, now that both types of models, viz., self-launching machines, whether off land or water, have been actually developed to the extent that is now the case, it is of the utmost importance from the scientific side of the question that far more attention should be given to the single-propeller type.

The popularity of the twin-propeller type is self-evident; not only

are the results (from a popular point of view) better, but the type is far easier to handle and fly successfully. It is also more stable, *not* owing to anything inherent in the design of the planes, &c., but because its greater speed naturally makes it more so. Also all gyroscopic action, &c., is absent. In fact, take an ordinary A frame, fit on two efficient propellers, and plenty of well-lubricated rubber, and it would be very difficult to say what such an apparatus would *not* fly in the way of planes, &c. The proverbial tea-tray (suitably selected) has to make its exit from the realms of the impossible in such a case as this.

The research committee of the K. and M.A.A. is busy organising a programme of research work for the coming winter, and in this the single-propeller type of model will be found to play a very important part.—V.E.J.]

Should the Rubber Motor be Enclosed?

is a question which is likely to come to the fore very shortly, viz., in the autumn, when this season's competitions are drawing to a close and many questions affecting future competitions will be thrashed out and decided.

Personally the writer is strongly in favour of such a course. Once put the rubber motor out of sight and you have removed the most objectionable feature of the ordinary model aeroplane, viz., its *toy-like appearance*. The use of rubber as a motive power is associated in the ordinary person's mind with little crawling cardboard tortoises and such like toys. It may, of course, be argued that it does not matter in the least what the ordinary person does think about it. This, however, whilst quite true in theory, perhaps, does not unfortunately hold in practice, because it should be the aim of every aeromodelist, as far as lies in his power, to do everything to enable the ordinary person to hold the best possible opinion of the art. This has not been done in the past, and model aviation has suffered considerably in consequence.

So long, of course, as competitors can please themselves as to the enclosing or non-enclosing of the rubber motor, most will undoubtedly adopt the latter course. But, if it were made a rule in all first-class competitions that the motor (if a rubber one) must be completely enclosed, everyone would be compelled to adopt it. It would be the same for all. Presuming the term "flying stick" to be literally interpreted, it would mean the disappearance straight-away of this type of model with its objectionable features and the substitution of built-up, covered-in fuselages, or fuselages of the monocoque type; in the case of twin-propeller models, this fuselage would naturally be double, presuming the A frame retained. Even so far as actual results are concerned, we much question whether they would not very soon be even better than those already obtained with the other type. The air resistance to an untwisting and vibrating skein of rubber is considerable, certainly more than would be the case were it enclosed in a tube of streamline form.

The device is not a new one, it has been tried successfully in the past; and we are quite sure its adoption would lead to the designing and building of model types of a much more valuable and scientific character than those now usually in vogue. We do not want separate clubs or societies for science and for sport, so much as to make our sporting competitions more scientific, and, it is also perhaps not altogether untrue to say, our science more sportive: it can be deadly dull at times.

The Hendon Aerodrome Model Competition.

On Wednesday, August 13th, a competition will be held at the above for r.o.g. models, which will be judged on an efficiency test. The difficulties that crop up in connection with endeavouring to devise any formula which shall be even approximately fair to the various types of models entered are such as can only be appreciated (or the opposite) by those who have endeavoured to tackle the problem. In devising such a formula evidently factors of advantage must be placed in the numerator and factors of disadvantage in the denominator: the formula thus becomes:—

$$(\text{Weight of model}) \times (\text{distance flown}) \times \text{duration}$$

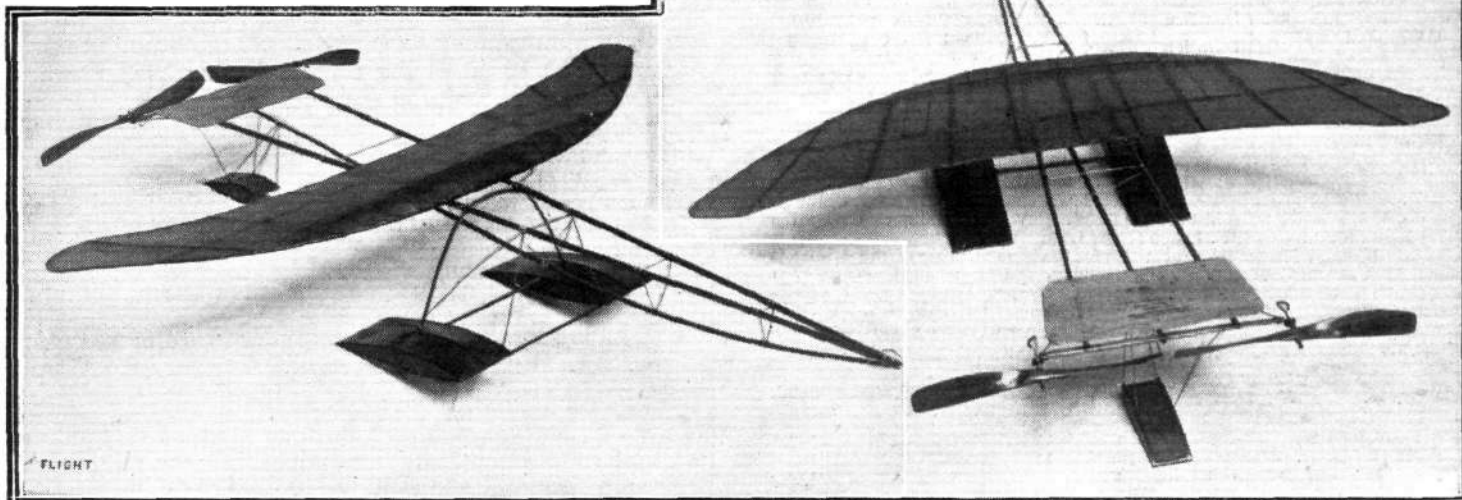
Total energy stored in the rubber.

The total energy stored in the rubber being calculated from experiments on the amount of energy that can be stored in a pound weight of rubber as given some time ago in FLIGHT. It is not claimed for the above formula that it is either perfect or free from criticism. It will be seen, however, that the winning machine is the one which possesses the best weight of model to weight of motor

ratio, and which makes the best duration and flies the greatest distance. For the latter result a straight flight of good duration is, as it should be, at a premium. Were the duration factor omitted it is evident the swiftest flying model would stand the best chance.

although any size can of course be made to order. The 3 sizes referred to are 3 ft. 3 ins., 3 ft. 6 ins. and 4 ft. lengths. The thickness of the walls is $\frac{1}{8}$ in. The wood is silver spruce—polished. The taper from $\frac{3}{8}$ in. to 1 inch. The workmanship and finish are

Two views of Mr. C. Ian Burrell's model hydro-aeroplane.



Whirling Table Experiments.

Several correspondents have written us *re* the above, to which reference has already been made; we hope to deal with this in the next issue.

Mr. C. Ian Burrell's Hydro-aeroplane Model.

The model illustrated was built at Christmas last for the Olympia Show, but, says Mr. Ian Burrell, "I was too busy to tune it up and bring it down. I tested it in the water in a high wind, and found the floats very satisfactory as regards flotation and skimming stability. Nose-burying was also absent. The wind was too high to attempt flying from the water, but previously I had found the stability good from a hand-launched flight.

"The wing, as you will see, is Weiss type, but it is too rigid. I am making a new one the same area, but with very flexible piano wire ribs. Silk covering is used all over; the wings are double surfaced. Since the photos were taken, I have altered the suspension, making it very flexible (all piano wire). I intend making a series of wings of various types and various floats, and undertake some systematic tests in the summer.

"The strength of the body is remarkable. Dimensions, &c.: Body length, 3 ft. 6 ins.; span, 3 ft.; area of main plane, 170 sq. ins.; tail (non-lifting), 40 sq. ins.; propeller, 10 ins. diam., 12 ins. pitch; floats 12 ins. apart; main floats, 9 ins. by 3 ins. by $1\frac{1}{2}$ ins.; maximum flotation, 15 ozs.; tail, 5 ins. by 2 ins. by 1 in.; weight of machine, $9\frac{1}{2}$ ozs. plus 2 ozs. of rubber; centre of gravity, 1 in. in front of the rear edge of the main floats and 3 ins. behind the leading edge of the main plane. I will let you have results of tests when completed."

The Bowick Tractorplane.

The following are the chief dimensions, &c., supplied us by Mr. W. R. Bowick:—

Fuselage.—Triangular in section, 36 ins. long, made of $\frac{1}{4}$ in. by $\frac{1}{4}$ in. birch; maximum width and depth 3.5 ins. and 4.25 ins. respectively; all struts streamlined and the whole braced diagonally.

Landing chassis.—V type $\frac{1}{8}$ in. by $\frac{1}{4}$ in. streamline hickory; wheels 2 ins. in diameter, rubber sprung; tail skid also rubber sprung.

Propeller.—12 ins. diameter, centre 14 ins. pitch; driven by 10 strands $\frac{1}{4}$ in. strip "Duree" rubber.

Rudder.—Balanced, approximate area 12 sq. ins., made of 16 gauge plane wire.

Tail.—Tailplane approximately 32 sq. ins. in area; elevator 12 ins. span by 2 ins. divided, both constructed of 16 gauge wire.

Main planes.—Area, 244 sq. ins. double surfaced, braced with 4 strands of Bowden cable wire top and bottom. Main spar $\frac{1}{8}$ in. by $\frac{1}{4}$ in., front spar $\frac{1}{8}$ in. sq. section.

Fittings.—Bonn ball-bearing propeller bracket and Mr. Petrie's device for overcoming torque.

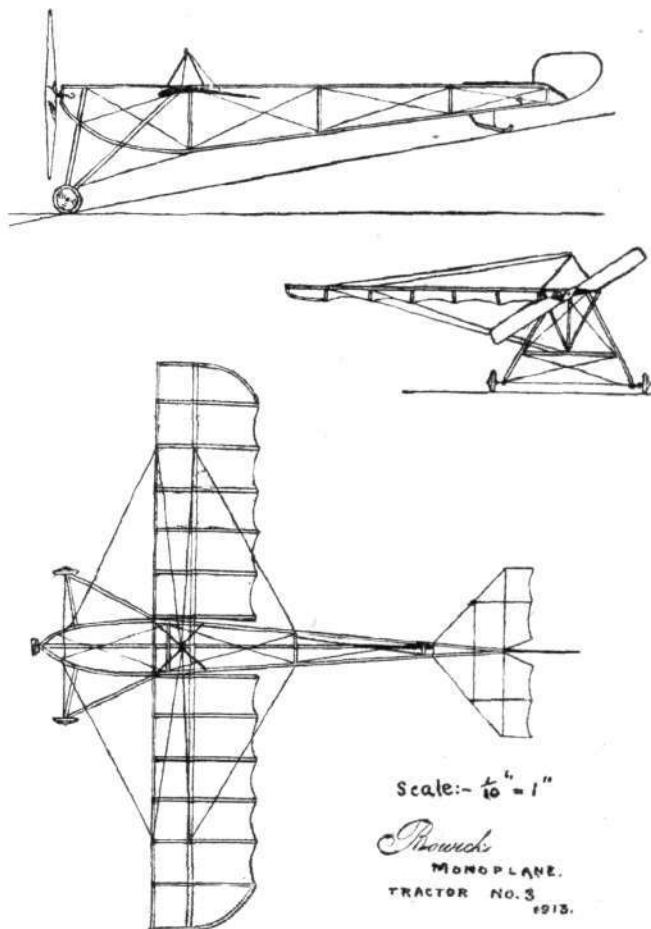
Messrs. G. Bonn and Co.'s Hollow Oval Tapered Spars.

These spars, which do away with all wire bracing, so far as any rate as it affects the motor rod, are at present stocked in 3 sizes,

excellent, and the vertical sides of the oval being approximately flat greatly assists the fastening of the planes, chassis, &c., to the same. There was certainly a want of such a device, and Messrs. Bonn and Co. appear to have supplied it in a most satisfactory manner.

Suggested Experiments with Models.

Mr. W. E. F. Clarke (Tunbridge Wells) writes: "In reference



Mr. Bowick's model monoplane.

to your article in a recent issue on the above, in the first two cases (where staggered and non-staggered planes are mentioned), do you mean that the lower plane should have a smaller chord and larger

camber than the top plane as in the Bragg-Smith model illustrated? If so, would the non-staggered positions of the planes be when the entering edges of both planes, top and bottom, are in the same vertical plane?"

The total plane area should be the same in all three cases; the reply to both queries is yes.

KITE AND MODEL AEROPLANE ASSOCIATION

Official Notices.

British Model Records.

Hand-launched	Distance	R. Lucas	590 yards.
	Duration	J. E. Louch	100 secs.
Off ground	Distance	L. H. Slatter	365 yards.
	Duration	A. F. Houlberg	80 secs.
Hydro, off water	Distance	L. H. Slatter	45 secs.
	Duration	F. G. Hindsley	173 yards.
Single-tractor screw, hand-launched	Distance	J. E. Louch	68 secs.
	Duration	L. G. Tucker	142 yards.
Do., off ground	Distance	J. E. Louch	45 secs.
	Duration	J. E. Louch	45 secs.

Displays.—By invitation, a team of modelists visited Redgrave Park, Diss, and gave an interesting demonstration of hand-launched, r.o.g., and hydro models. The members who were selected were as follows:—Messrs. L. H. Slatter, J. McBurnie, F. Whitworth, and W. J. Williams, also C. C. Dutton (Paddington Club), and J. E. Louch (N.E. London).

Competitions.—The model competition for the championship of the Midlands was held at Burton-on-Trent on Bank Holiday, and it attracted an entry of 31 competitors, who hailed from London, Manchester, Birmingham, Sheffield, Leicester, &c. The judges, Messrs. W. H. Akehurst (K. & M.A.A.), C. F. Cudworth (Sheffield Aero Club), and G. Haddon-Wood (Birmingham Aero Club), made the following awards:—

Place.	Name.	Duration.	Stability.	If off Ground 20 Extra Marks.	Design.	Total.
1	A. F. Houlberg, Putney	79	15	20	8	122
2	L. H. Slatter, Clapham	72	15	20	9	116
3	J. McBurnie, Tottenham	64	18	20	8	110
4	J. C. Forsdyke, Leicester	62	20	H.L.	7	89
5	G. Baker, Birmingham	65	17	H.L.	6	88
6	J. C. Askew, Sheffield	62	16	H.L.	8	86
7	H. Sibley	52	18	H.L.	7	77
8	J. D. Lea	44	11	H.L.	6	61
9	J. W. Kenworthy	15	15	20	7	57
10	C. Dewnap	26	10	H.L.	7	43

Mr. A. F. Houlberg, therefore, won the championship of the Midlands, taking the cup and £5 cash; Mr. L. H. Slatter 2nd prize, £3; Mr. J. McBurnie 3rd, £1; Mr. J. C. Forsdyke 4th, 10s.; Mr. G. Baker 5th, 10s.

Littlehampton Meeting.—The kite flying competition for the Littlehampton Cup was keenly contested, the result being:—1st, A. W. Brown, with 335 marks, winning the handsome cup; and, T. Brown, with 330 marks, won a rose bowl; 3rd, W. A. Collins, with 304 marks, won the tankard. The model competition for the Littlehampton Trophy also had a good meeting, considering the other contests, &c., on the same day. The results and prizes were: 1st, Littlehampton Model Trophy, won by H. G. Bond, with 70 secs. duration off ground; 2nd, rose bowl, won by C. C. Dutton, with 53 secs.; 3rd, tankard, won by J. E. Louch, with 53 secs. Also, a junior kite contest was held for prizes of Brookites presented by Messrs. Brooke and Westhorpe, the winners also taking Boys' Book of Aeroplanes, given by Lieut. T. O'B. Hubbard, Royal Flying Corps: 1st, E. Durrant, 130 marks; 2nd, G. Burnard, 118; 3rd, E. Pearson, 116; 4th, G. White, 83; 5th, W. Moore, 83. Capt. Bateman and Mr. R. H. Lanchester were the judges.

Royal Aero Club's Prize.—The hydro contest for the R.A.C. prize takes place to-day (Saturday), at the Welsh Harp, Hendon, at 3 o'clock. It is hoped that many of the members of the Royal Aero Club will be present.

Model Competition, to be held at the 100 acre field, Greenford (Station: Perivale Halt, via Westbourne Park), August 16th, at 3 o'clock. Entries close Saturday, August 9th. The "Wakefield" Competition, for models rising from the ground under their own power (open to the world); free to members; non-members' entrance fee, 2s. Prizes: 1st, Gold Challenge Cup and Gold Medal (presented by Alderman Sir Charles Wakefield, D.L., J.P.); 2nd, Silver Medal of the Association; 3rd, Bronze Medal of the Association. Tests: A, duration; B, stability in flight; maximum marks, 100; 75 for Test A, 25 for Test B. Rules: 1. Competitors may submit models of any kind. 2. Models must not weigh less than 8 ozs. 3. Competitors must be at the judges' flag at 2.30 o'clock. Those not present at that time will be disqualified. 4. Models to be timed from time of leaving ground till time of landing, or till they disappear from the observer's view. 5. Competitors will not be allowed to replace any part (or parts) without the permission of the judges. 6. Each competitor is entitled to three trials if time permits.

Kite Flying Competition, Wimbledon Common, August 23rd, at 3 o'clock. Entries close Saturday, August 16th. Free to Members; non-members' entrance fee, 2s. 6d. The Trollope Challenge Cup, presented by the late Lieut.-Col. F. C. Trollope. Prizes (presented by Mr. E. C. Trollope): 1st, Gold Medal, and winner to hold cup for the year; and, Silver Medal; 3rd, Bronze Medal. For rules see page 6 of Programme. Additional rules governing this competition: 1. Competitors must use a team of 2 kites, with a minimum total measurement of 80 ft., computed by Kite Rule 2. 2. Length of main line, or wire, to total 400 yards. 3. Points of attachment to be 30 yards apart. 4. Length of attaching lines, if used, not to exceed 50 yards. 5. All lines to be officially measured. 6. Each competitor will be allowed one assistant. 7. Competitors must be at judges' flag at 2.30 p.m. sharp, any not present at that time may be disqualified. 8. 100 marks will be awarded for angle of lowest kite, and 100 marks each for stability, strength of construction, and collapsibility, to be divided between the two kites. Total maximum marks 400.

Competitions.—The Ornithopter Competition for the Baden-Powell Prize takes place on August 23rd, on Wimbledon Common, at 3 o'clock. Entries close Saturday 16th.

27, Victory Road, Wimbledon.

W. H. AKEHURST, Hon. Sec.

AFFILIATED MODEL CLUBS DIARY.

Aero-Models Assoc. (N. Branch) (25, CHURCH CRESCENT, MUSWELL HILL, N.).

AUG. 9TH, club visits, Welsh Harp.

11 10TH, r.o.g. practice, 10 a.m.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).

AUG. 9TH, r.o.g. practice flying at Sudbury.

16TH, r.o.g. duration competition, 8 oz. minimum.

Reigate, Redhill and District (THE COTTAGE, WOODLANDS AVENUE, REDHILL).

AUG. 9TH, flying on Earlswood Common.

Wimbledon and District (165, HOLLAND ROAD, W.).

AUG. 9TH, r.o.g. competition, 4 o'clock. 10th, usual flying.

UNAFFILIATED CLUB.

S. Eastern Model Ae.C. (1, RAILWAY APPROACH, BROCKLEY).

AUG. 9TH, Kiddbrooke, 2.30-5.30 p.m.; Woolwich Common, 3.30-6.30 p.m.

Aug. 10th, Blackheath, 7.30-10 a.m.; Lee Aerodrome, 10.30 a.m.-12.45 p.m.;

Mitcham, 2.30-5.30 p.m. Entry forms for the second round of the "South Eastern" Trophy Competition (Aug. 30th) must be sent in by the 28th inst.

CORRESPONDENCE.

Aeronautical Tour.

[1774] A joint committee of the Aerial League of the British Empire and the Women's Patriotic Aerial League has been formed for the purpose of organising a popular illustrated tour, to include various towns and watering-places on the south and east coasts.

The members of this special committee are:—The Lady O'Hagan (chairman of the Women's Aerial League), Gen. H. T. Arbuthnot, C.B., R.A. (chairman of the Aerial League of the British Empire), Mrs. Watt Smyth, Col. H. S. Massy, C.B., Mrs. Hinscliff, Mr. Hercules Scott, and Miss Dudley.

A most successful meeting was held on the 18th ult. at Southsea, where branches of the League were formed, including many distinguished residents. A popular illustrated lecture will be delivered by Colonel Massy at the Cinema Theatre, Broadstairs, on the 8th August, preceded by a Scout Rally. Other places proposed to be visited are Southampton, Bournemouth, Hove and Brighton, Eastbourne, Hastings and St. Leonards, Dover, Folkestone, Ramsgate, Margate, Southend, Chatham and Sheerness, Clacton, Felixstowe and Harwich, Southwold, Lowestoft and Yarmouth.

Each pictorial demonstration costs the League at least £16 in local organising, advertising, &c. The Joint Committee, therefore, beg that any persons interested in the vital question of national aerial progress will subscribe for the cost of the whole, a half, a quarter or an eighth of a demonstration at any of the above places, naming the town they wish the money to be expended in. All subscriptions will be publicly acknowledged in London and locally.

Local honorary helpers and organisers are urgently needed. Any offers of personal assistance from subscribers and well-wishers, together with any suggestions, will be thankfully received by the committee at the offices of the Women's Patriotic Aerial League, 25, Denison House, Vauxhall Bridge Road, S.W.

August 4th, 1913.

H. T. ARBUTHNOT, Major-General.

PUBLICATION RECEIVED.

Essais et Reglage des Moteurs. By G. Lumet. Paris: H. Dunod and E. Pinat, 47-49, Quai des Grande-Augustins. Price 5 frs. 50.

NEW COMPANIES REGISTERED.

Hydroplane Catamaran, Ltd., 15-17, Eldon Street, E.C.—Capital £500, in £1 shares. First directors, Dr. F. A. Barton, E. Antoniadis, and M. Isaacs.

National (Passenger-Airships) Assoc., Ltd., 39, Lombard Street, E.C.—Capital £10,000, in 9,000 ordinary shares of £1 each and 20,000 deferred shares of 1s. each. Objects, to establish services of passenger-carrying airships or other forms of flying machines. First directors, H. Houbert, P. H. Massey, H. Billingshurst, and E. C. Powell.

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